S. HRG. 101-875

REAUTHORIZATION OF THE TUBERCULOSIS PREVENTION AND CONTROL PROGRAM

HEARING

BEFORE THE

COMMITTEE ON LABOR AND HUMAN RESOURCES UNITED STATES SENATE

ONE HUNDRED FIRST CONGRESS

SECOND SESSION

ON

EXAMINING PROPOSED LEGISLATION AUTHORIZING FUNDS FOR THE TUBERCULOSIS PREVENTION AND CONTROL PROGRAM OF THE CENTERS FOR DISEASE CONTROL, DEPARTMENT OF HEALTH AND HUMAN SERVICES

APRIL 26, 1990

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REAUTHORIZATION OF THE TUBERCULOSIS PREVENTION AND CONTROL PROGRAM

THURSDAY, APRIL 26, 1990

U.S. SENATE,
COMMITTEE ON LABOR AND HUMAN RESOURCES,
Washington, DC.

The committee met, pursuant to notice, at 2 p.m., in room SD-430, Dirksen Senate Office Building, Senator Brock Adams, presiding.

Present: Senator Adams.

OPENING STATEMENT OF SENATOR ADAMS

Senator ADAMS. Good afternoon. The hearing will come to order.

Today the Committee on Labor and Human Services takes up the Reauthorization of the Tuberculosis Prevention and Control Program of the Public Health Service Act.

Quite frankly, I find it a bit disappointing that we even need to be here today. Tuberculosis is no stranger to public health.

Evidence of this disease has been traced to the remnants of the Egyptians mummies. Although current estimates indicate that up to one-half of the world's population has been infected with this virus, we have had some knowledge about how to prevent, control, and eventually eliminate tuberculosis for over 30 years.

While this disease was on the decline in our country for many years, the rates of decline have tapered off and are now on the rise again.

Today's hearing will focus on the public health issues that are arising from these alarming trends. Why is tuberculosis successfully entrenching itself in specific populations and how can we root it out? What is the likelihood of success for the Secretary of Health and Human Services Advisory Committee's recommendations for eliminating TB by the year 2010, given current budget requests and current appropriations?

And finally, what is being learned in the laboratories and in the public health offices in this Nation that will help us succeed in achieving our ambitious goals?

With over 22,000 new cases of TB reported in the United States in 1988, we are in urgent need of answers and specific strategies.

I am particularly concerned to learn that tuberculosis is being detected among children in homeless shelters around the country, one of which is located in my own State.

The elderly, impoverished, minority populations, and other vulnerable groups are hardest hit by TB. What are we going to do to

protect them and to prevent wider outbreaks of this frequently fatal disease?

Nearly 20 years ago one of the leading experts in the field of tuberculosis prevention and control wrote and I quote, The steady downward trend of tuberculosis incidents in the United States has led to predictions for at least the past 30 years that it would be eradicated from the most fortunate countries. The outlook for these countries continues to brighten, but there is no room for complacency, unquote.

We will now receive statements for the record by Senator Harkin and Senator Cochran.

[The prepared statements of Senator Harkin and Senator Cochran follow:]

PREPARED STATEMENT OF SENATOR HARKIN

Senator HARKIN. Mr. Chairman, I want to commend you for calling today's hearing on the reauthorization of the tuberculosis prevention and control program within the Centers for Disease Control. The control, prevention and eventual elimination of tuberculosis are vitally important public health goals. As Chairman of the Appropriations Subcommittee on Labor, Health and Human Services, Education, which is responsible for providing the funds to run this program, I am especially interested in today's hearing.

Mr. Chairman, we have made great progress in controlling tuberculosis, however, over the past 5 years the steady decline in cases has stopped. Better control of this disease would not only prevent much human suffering and hardship, but reduce health care costs as well. Nearly two thirds of cases are currently preventable, yet the opportunity to prevent is too often lost. I look forward to working with you and the members of the committee in addressing this important health care concern.

Thank you.

PREPARED STATEMENT OF SENATOR COCHRAN

Senator COCHRAN. I want to thank my colleague from Washington, Senator Adams, for chairing this important hearing on the reauthorization of the Tuberculosis Prevention and control Program. it gives us an opportunity to once again focus on the importance of preventive health services. Tuberculosis is a prime example of a preventable, curable disease that could be completely eliminated in this country with adequate resources.

I am especially pleased to welcome Dr. Ed Thompson, State Epidemiologist and Chief of the Bureau of Preventive health with the Mississippi Health Department, who will be commenting on our State's tuberculosis prevention and control program. Dr. Thompson is highly respected by his colleagues throughout the Nation and administers a very effective program for Mississippi.

Although there has been a steady decline of tuberculosis in the United States, this decline has leveled off in recent years. in fact, a large increase has occurred among Hispanics and blacks since 1985. With this trend, comes a growing frustration that we have the technology and the know-how but lack the resources to adequately

deal with many of our preventable health problems such as tuberculosis.

Whitle Congress has been slow to give priority to preventive health care, it seems to be slowly recognizing that more emphasis on preventive care is one of the best ways to deal with the escalating costs of health care. The broad support of recent legislation entitled the Health Objectives Act 2000 is an example of this recognition. The Health Objectives Act 2000 would provide a large infusion of Federal dollars into a State block grant that would be used according to a State plan developed by State health officials. It does not, however, call for the elimination of certain categorical grant programs such as hypertension screening and cancer screening. in addition, the State plan could supplement tuberculosis prevention efforts or other efforts which have separate funding mechanisms.

If we are going to get serious about addressing health care costs, we must start giving more attention to preventive health measures.

Senator ADAMS. Dr. Comstock, your words from 1973 have come back to haunt us today. We look forward to hearing from you and from others about whether complacency played a role in our current situation and what needs to be done to mount an aggressive effort for the future.

I am pleased to call first Dr. Charles Nolan, Tuberculosis Control Officer, Seattle-King County, Department of Public Health, Seattle, WA; and Mr. F. E. Thompson, Jr., M.D., State Epidemiologist, Chief, Bureau of Preventive Health, Mississippi Department of Health from Jackson, MS.

We are pleased to have you both here today. Whichever of you wish to present first may do so. We would be pleased to receive your full testimony for the record and than you may wish to summarize.

STATEMENT OF DR. CHARLES NOLAN, TUBERCULOSIS CONTROL OFFICER, SEATTLE-KING COUNTY DEPARTMENT OF PUBLIC HEALTH, SEATTLE, WA

Dr. NOLAN. Thank you, Senator Adams. I will start off.

Senator ADAMS. All right, Dr. Nolan. You are recognized.

Dr. NOLAN. Thank you for the opportunity to testify on behalf of several thousands of county and local public health agencies throughout the U.S. who work at the action end of tuberculosis control experiencing the pleasures and the difficulties of treating sick patients and attempting to prevent sickness in others who are at risk.

Our agency has been the recipient of a TB project grant since the inception of the program in 1983. In my brief testimony I want to describe the key role that this grant now plays in our TB control effort and I want to urge you to reauthorize the National TB Prevention and Control Program at the fully authorized level of $36 million so that other local TB programs might benefit, as ours has.

In the late 1970's, our agency lost its special source of TB funding with the repeal of a dedicated millage on property taxes. This was based on the belief that tuberculosis was on its way to extinction, but a funny thing happened on that pathway.

TB, which had been decreasing in our region at a very regular rate of 5 to 10 percent per year or about 50 percent over 10 year periods, decreased only 23 percent during the decade of the 1980's.

Furthermore, all of that decline occurred in the first 5 years. During the last 5 years of the 1980's, our annual case rate of tuberculosis increased about 15 percent.

We have looked very hard at the reasons for this pause in the decline of TB in our city and county. What we found was that tuberculosis has indeed receded from the majority white population, but that it has become entrenched in certain small and well defined pockets from which it is not at all receding, but is persisting stubbornly.

Individuals born abroad who came to the U.S. either as immigrants or refugees from parts of the world where tuberculosis is still endemic, homeless individuals, and expanding population that may number 10,000 in Seattle and King County at the present time and which now includes many women and children, patients with AIDS, native Americans, the elderly, for diverse reasons, some of which are understood and some of which are not. Individuals who can be identified as members of the groups that I have just named have a risk of TB that is 10 to 50 times that of the white majority population. These are American citizens too and they deserve better.

Following the recommendation of the CDC Advisory Committee's strategic plan for the elimination of TB, we have increasingly targeted our TB control effort to these high risk minority populations.

Our program now virtually ignores our run of the mill white citizens. Even with specifically focused activities, we are not gaining much ground. As mentioned, numbers of TB cases have increased during the past 5 years.

In addition, each year we provide preventive therapy to only 2 to 4 percent of those high risk individuals in our community who should ideally receive it.

Running as fast as we can, you can see that we are not gaining ground.

Into this somewhat depressing Seattle climate, our TB project grant blew like a fresh breeze. We have received, on average, about $50,000 a year since 1983 under this program. This equals only about 7 percent of our annual budget, but I can assure you that we have gotten a lot of mileage out of those dollars.

We used our grant funds to hire two new employees; a public health nurse and a community services worker who spend their time exclusively providing services outside of our clinic on the streets of Seattle and often in its bars and flop houses. This is the area where our homeless people have traditionally congregated and now where many of our new immigrants find low cost housing.

Each year this pair of workers accounts for between 2,000 and 3,000 individual encounters with patients either with tuberculosis or at high risk.

In most instances the encounters consist in giving doses of curative or preventive medicine directly, doses that would otherwise have been missed due to noncompliance.

These positions in field work with TB have a unique job description; the saintly dedication of a Mother Teresa, the warm personality of a Jane Polly, the iron will of a Margaret Thatcher.

Our evaluations tell us that this is a succeeding program. For example, in 1985, soon after the inception of our grant, homeless individuals accounted for 25 percent of our new cases of TB.

Last year, in 1989, tuberculosis in homeless individuals constituted 13 percent of our cases, a decline of almost 50 percent during the life of a TB project grant.

I am certain beyond doubt that our new program caused this decline.

It is exciting to think that other local public health agencies could receive a boost in their fight against TB through the increased availability of funding for TB project grants.

Let me close with a tragic story that is unfolding right now at a small city near Seattle to which Senator Adams just alluded.

A shelter for battered women and their children was recently opened in this city through the efforts of several local volunteer organizations. One of the clients of this shelter developed advanced pulmonary tuberculosis and by the time the disease was recognized had exposed many other shelter clients. At the present time, four children under the age of 5 years have been diagnosed with active tuberculosis as a consequence of this exposure.

In our city, the TB project grant has allowed us to establish screening programs at downtown shelters which are designed to detect individuals with tuberculosis before the symptoms advance sufficiently to put others at danger; in other words, to prevent situations precisely like this.

Our little neighboring city and others throughout the country deserve a similar opportunity to add this extra dimension to their TB control efforts.

This Congress has a great opportunity and, if I may say so, a great responsibility to speed us on the pathway toward the elimination of tuberculosis by strengthening State and local tuberculosis control efforts throughout the U.S. with the appropriation of the fully authorized amount, $36 million, for the TB Prevention and Control Program. I hope that you do not miss this opportunity.

Thank you.

[The prepared statement of Dr. Nolan follows:]

Prepared Statement of Charles M. Nolan, M.D.

The Seattle-King County Department of Public Health appreciates the opportunity to submit testimony in support of the TB Project Grant program for Fiscal Year 1990. This agency has conducted a tuberculosis control program for many years, and has been the direct recipient of funds authorized under the TB Project Grant program since its inception in 1983. The purpose of this testimony is to present data that show that the TB Project Grant has become an integral component of this health department's tuberculosis control program and thereby to support increased funding for this program for Fiscal Year 1990.

For the past 30 years, this combined city (Seattle) and county (King) agency has operated under the assumption that tuberculosis is a disease that is gradually declining in importance as a public health threat. There has been ample evidence to support this view. The incidence rate of tuberculosis (the number of new cases per 100,000 population per year) in our jurisdiction declined from 75 in 1940 to 25 in 1960, and to just over 10 in 1980. As a consequence of this progressive decline in tuberculosis, formerly the number one public health problem in the United States, revenues for disease control and prevention began to be shifted toward more pressing public health problems. A memorandum originated by the Tuberculosis Control Program of this department in 1978 proudly announced that

during the 1970s it had saved $5.4 million. This savings arose because $7.9 million were available for TB control, through a special tax millage, but only $2.5 were expended. The special millage, tied to property values, was terminated and funds were shifted toward issues such as environmental and occupational health hazards, risk factor reduction of habits such as smoking and alcohol, and primary health care for underserved segments of the population.

But a funny thing happened on the way to the disappearance of tuberculosis. Someone apparently forgot to inform the disease itself that it was programmed for disappearance, and it stopped cooperating. Thus, in 1989 the incidence rate of tuberculosis in Seattle-King County had declined only 25% from that in 1980. Furthermore, all of that modest decline occurred in the first half of the decade; during the past 5 years new cases of tuberculosis per year have stabilized and begun to rise.

Perhaps we should not be surprised that this of all diseases, one which has been intimately associated with mankind throughout our history (evidence of tuberculosis exists clearly in Egyptian mummies), should be resistant to final eradication.

This testimony will describe the current status of tuberculosis control in Seattle, will indicate the important contribution being made by the TB Project Grant that we are receiving, and will present data indicating that a further reduction in tuberculosis morbidity in our population will

require a greater dedication of resources toward the problem. In this respect, we strongly support the proposal that funds authorized for TB Project Grants for Fiscal Year 1990 be increased considerably.

CURRENT STATUS OF TUBERCULOSIS IN SEATTLE-KING COUNTY

The annual incidence of tuberculosis (number of new cases diagnosed per 100,000 population) in Seattle-King County in 10-year intervals from 1920 through 1989 is shown in Figure 1. There was a regular decline from 1930 until 1970, but since 1970, the decline in new cases has slowed considerably. The current incidence, 7.2, compares to an annual incidence in the U.S. as a whole of approximately 9.0. Thus, the overall morbidity due to tuberculosis in Seattle-King County, in terms of new cases diagnosed per year, is very similar to that of the country as a whole.

More specific information on the recent trend of tuberculosis in our region is depicted in Figure 2, which shows the annual incidence of tuberculosis from 1976 through 1989. The decline from 1976 through 1978 was a continuation of the previous trend. The peak noted from 1979 through 1981 corresponded with the influx of thousands of refugees from Southeastern Asia into our region. These new immigrants, many of whom had latent tuberculosis waiting to activate, stressed our control program tremendously. However, as shown in Figure 2, throughout the early 1980s, the decline in tuberculosis resumed as we gradually began to apply prevention and treatment services to Southeast Asian refugees. The historic low number of cases occurred in 1984, with the report of 84 cases.

Since 1984, the trend of tuberculosis in our region has increased (Figure 2). This increasing trend during the past 5 years is particularly disturbing because (with one exception) there is nothing specific to which to attribute it. As striking as was the increase in morbidity in the early 1980s, the reason was known and ultimately addressed. In contrast, the current leveling and increase in TB in more recent years seems to reflect a stubborn persistence of tuberculosis in intrenched pockets of our population and the early emergence of one very significant and very ominous problem, the advent of infection due to Human Imunodeficiency Virus Type 1, the cause of AIDS.

HIGH RISK POPULATIONS FOR TB IN SEATTLE-KING COUNTY

A properly designed tuberculosis control program in the U.S. today requires a more sophisticated analysis of morbidity than simply following the incidence rate of tuberculosis in the general population. Table 1 shows that when the population of our region is divided into well-defined subsegments, a picture emerges of highly divergent risks of tuberculosis. These incidence rates for specific population subgroups, based on the best available data from censuses and other surveys, reflect a risk of tuberculosis among non-White individuals 15 times that of individuals of White race. Further subdivision of non-White minority citizens indicates that those whose origin was Asia and the Pacific Islands, excluding Japan, had an incidence rate of 35 times that of White individuals.

The incidence of tuberculosis in homeless individuals is hard to calculate because of the difficulty in numbering the population. Using an estimate of 10,000 homeless individuals in our city and county, the incidence of tuberculosis among them in 1989 was over 40 times that of White individuals.

Two other population groups that can be defined with relative ease and which have increased rates of tuberculosis in comparison with that of White individuals are the elderly, with a rate of almost 10 times of that of the baseline, and individuals with HIV infection, with a rate over 20 times elevated.

Finally, Table 3 indicates that the greatest risk of tuberculosis exists among contacts of cases of the disease. Between 1 and 2% of contacts of active tuberculosis will themselves have the disease at the time the source case is reported.

Information such as that presented in Table 3 guides our tuberculosis control program in focusing its activities specifically toward populations where tuberculosis is still a problem. Thus, we exspend little effort in working with White individuals, unless they are members of another subgroup with a higher incidence of tuberculosis. We expend a great deal of effort, on the other hand, attempting to provide treatment and prevention services to homeless individuals, to Asian and Pacific Islanders, and those with HIV infection. As a matter of course, we drop everything when we have an opportunity to examine and offer services to a contact of a newly-reported case of tuberculosis, particularly when there are children involved.

Translating those incidence rates to actual numbers, among all 97 cases of tuberculosis diagnosed in Seattle-King County residents in 1989, 82 (85%) occurred in individuals from the following well-defined, high-risk populations: foreign born individuals from a part of the world where tuberculosis is highly endemic; indiginous populations where tuberculosis is endemic, such as homeless individuals and American Indians; individuals with HIV infection; and contacts of other cases.

RESOURCES AVAILABLE FOR TB CONTROL

What are the resources available to control tuberculosis at the Seattle-King County Department of Public Health? Figure 3 shows the annual tuberculosis control budget from 1982 through 1990. Through the early 1980s, as TB morbidity was on the decline following the Southeast Asia refugee influx, the budget declined concomitantly. In 1987, our budget was 70% of that of 1982. In the three years following 1987, the budget has actually remained stable, but the 7% increase per year has reflected cost of living adjustments; there has been no increase in services during those years.

Even in this recent era of a declining and static level of resources, there is evidence of a succeeding program considering some of our targeted groups. For example, in 1980 the incidence rate of tuberculosis in refugees from Southeast Asia entering Seattle and King County was over 300 per 100,000. In that same population in 1989, the incidence rate had declined to approximately 60 per 100,000 (an 80% decline).

On the other hand, our program evaluations indicate that we are not making a terribly significant impact in some areas. For the past several years, during which our TB Control Program has increasingly focused on providing preventive services to individuals from groups at high risk of tuberculosis, we have started between 800 and 900 high-risk patients on preventive therapy each year. However, a calculation of the total number of individuals from those high-risk populations (foreign born individuals, homeless individuals, American Indians, individuals with HIV infection, and contacts of cases of TB) are estimated to include approximately 20,000 total individuals who should qualify for Isoniazid preventive therapy. If we treat in a preventive fashion 800 individuals a year from these populations, we are reaching only 4% per year of those who need services. We need to do better.

THE TB PROJECT GRANT

Into this scenario of leveling or increasing tuberculosis morbidity, a leveling or declining tuberculosis budget, and evidence of significant unmet needs, our TB Project Grant blew like a fresh breeze. This agency has received on average approximately $50,000 a year under the TB Project Grant Program. Although this grant accounts for less than 10% of our annual budget, it has provided a crucial boost in our services. This program was originally envisioned to intensify outreach efforts in areas of high tuberculosis incidence. In our city, the most prominent pocket of high tuberculosis incidence is the inner city of Seattle. Seattle's inner city

is populated by thousands of homeless individuals, compromised by numerous health problems such as poor nutrition and mental disease, and possessed of a high risk of tuberculosis.

Homeless individuals have traditionally been one of the most difficult population subgroups for TB controllers in the U.S. to deal with. In particular, they tend to resist the prolonged period of treatment necessary to cure their disease. Consequently, their therapy often is sporadic and their case of TB tends to become chronic and to develop resistance to drugs. Finally, because of the conditions of crowding and poor nutrition, the disease may spread widely from homeless patients to other close contacts.

Our TB Project grant has made a very significant impact on our efforts to control tuberculosis in our homeless population. We used our funds to hire two health professionals, a public health nurse, and a community services outreach worker to work full time with this population. One of the individuals actually spends 40 hours a week in the field outside of the clinic providing direct services such as transporting patients to the clinic, delivering medications, and providing other tuberculosis screening services. Each year since the inception of this grant program, this team of two individuals has recorded over 2,000 patient encounters outside of our clinic. The majority of these encounters have been for the purpose of directly administering a dose of tuberculosis medication, either in treatment or in prevention, that would not have otherwise been given.

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We now have direct evidence of the impact of this program on tuberculosis morbidity in Seattle-King County. In 1985, soon after the inception of the TB Grant, homeless individuals comprised 25% of the total tuberculosis cases of this city and county. In 1989, tuberculosis morbidity attributable to homeless individuals was 13%, a decline of almost 50% from 1985. It is certain that this significant decline of tuberculosis morbidity in Seattle's homeless is in large measure directly attributable to the TB Project grant.

The lesson from the foregoing description of the impact of the TB Grant Project on our TB control effort is simple: additional resources, properly targeted and focused, can make a significant difference. For this reason, we strongly endorse the proposal for a major expansion of the appropriation for TB Project Grants for Fiscal Year 1990. It is exciting to think that other public health agencies could receive additional funds to target high incidence tuberculosis problems such as we have targeted in our inner city homeless population. It is particularly exciting to think that agencies such as ours, with experience administering these projects, could receive additional funding.

We fully realize that our problem with tuberculosis cannot and should not be undertaken by the federal government exclusively. As noted, TB Project Grant funds have consistently comprised less than 10% of our total TB control budget. However, there is aggressive competition for dollars in local health agencies these days. In addition to the greatly expanded interest in environmental and occupational health problems, the spector of

AIDS has provided direct competition in traditional infectious disease control that has much more glamor and currency than our old familiar nemisis, tuberculosis.

Each year for the past several, our TB Control Program has proposed budget increases with specific additional programs for targeted TB control projects. In no instance were we successful. In fact, in our department's 1990 budget, the original proposal was that the Tuberculosis Control Program in Seattle-King County Department of Public Health be cut by 25%. With lobbying, our control program emerged intact at the previous years' level. Information available through the network of local public health agencies indicates that the problem encountered in sustaining tuberculosis control activities at this agency is not untypical.

POTENTIAL USES OF ADDITIONAL FUNDS

What could be done with additional TB Project Grant funds authorized by Congress? We are fortunate to have provided for us by the Advisory Committee for Elimination of Tuberculosis of the U.S. Public Health Service a strategic plan for the elimination of tuberculosis in the United States. This plan, extraordinarily conceived, at the same time practical and visionary, provides a plethora of suggestions for state and local public health agencies to enhance existing tuberculosis control programs, and to develop new initiatives.

I must offer an extremely strong endorsement for the value of more warm bodies to throw at the problem. Compliance with medical advice has long

been identified as one of the most important obstacles to the control of tuberculosis in this country. More extensive personal contact between public health workers and individuals with tuberculosis and those at high risk is often the difference between a compliant patient and a noncompliant one.

In our own community, there is a need for more extensive networking between our agency and institutions that serve populations at high risk for tuberculosis. Neighborhood and community clinics in low-income neighborhoods, health care systems for the homeless, minority physicians whose patient clientele constitutes for the most part individuals of their own ethnicity, and minority advocacy groups all have much to contribute to a community tuberculosis control effort. We would very likely use additional TB Project Grant funds to increase the knowledge of, and interest in tuberculosis by creating such a network. If it is possible to foster the idea that tuberculosis treatment and prevention in individuals at high risk should be an integral part of primary health program for such individuals, important public health and individual health issues are being addressed simultaneously.

CONCLUSION

In closing, why worry about the elimination of tuberculosis? As a public health problem in the United States at the current time, TB cannot match the morbidity and the cost of problems such as heart disease, cancer, and substance abuse. Has TB been reduced sufficiently so that we can be

comfortable in merely keeping the lid on, accepting 20,000 to 25,000 new cases a year in the U.S., and putting up with the bothersome purturbations in TB morbidity brought about by extraneous factors such as increased immigration and AIDS? The answer is clearly and resoundingly, no. TB is a preventable and a cureable disease. We possess the knowledge to wipe it out. It won't happen overnight, but with a concerted effort guided by the U.S.P.H.S. strategic plan, the pathway to the elimination of tuberculosis from the United States has been cleared. This Congress has a great opportunity to start us off on the pathway to TB elimination by strengthening state and local tuberculosis control programs through the authorization of an expanded TB Project Grant program. I hope that you don't miss the opportunity.

TABLE I
INCIDENCE RATE OF TUBERCULOSIS
IN CERTAIN POPULATION SUBGROUPS
SEATTLE-KING COUNTY, WASHINGTON
1989

POPULATION GROUP	INCIDENCE (Cases/100,000)	RELATIVE RISK*
Total Population	7.2	
White Race	2.9	---
Non-White Races	43.2	14.9
Asian-Pacific Islander	102.1	35.2
Homeless	130.0	44.8
Elderly (Age >70 years)	28.1	9.7
HIV Infected	66.7	23.0
Tuberculosis Contacts	1,290.0	444.8

*Risk of tuberculosis in comparison with that of White race.

FIGURE 1. INCIDENCE OF TUBERCULOSIS IN SEATTLE-KING COUNTY, WASHINGTON 1920 - 1989

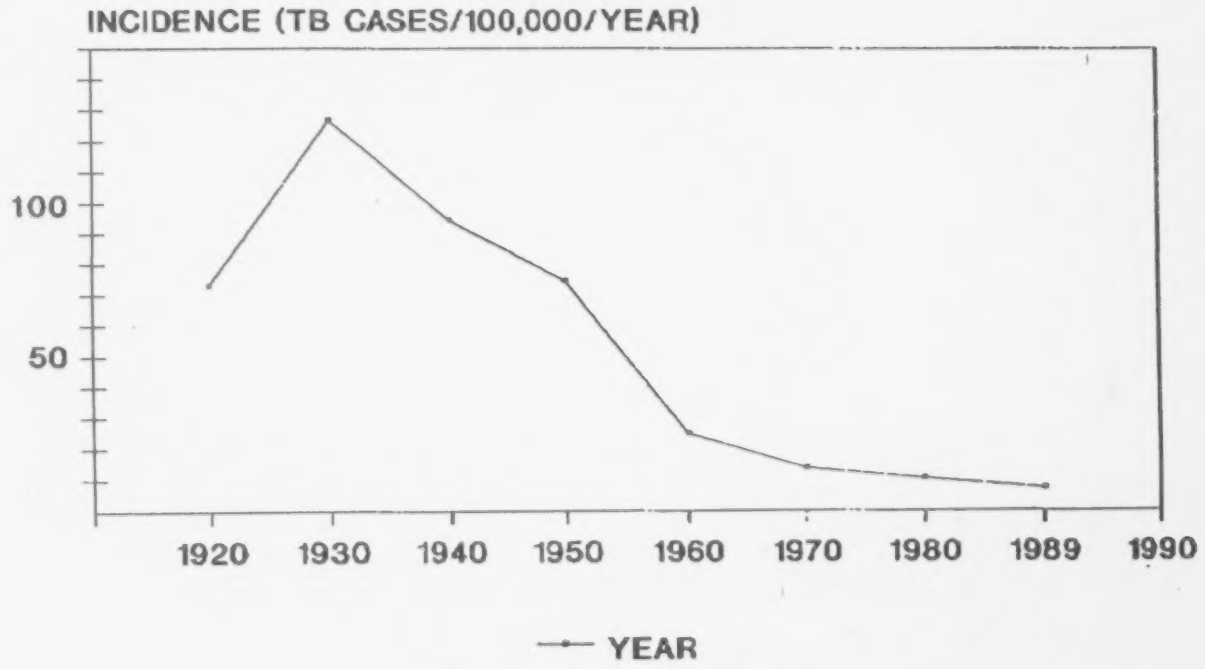


FIGURE 2. NEW CASES OF TUBERCULOSIS REPORTED PER YEAR 1976-1989 SEATTLE-KING COUNTY, WASHINGTON

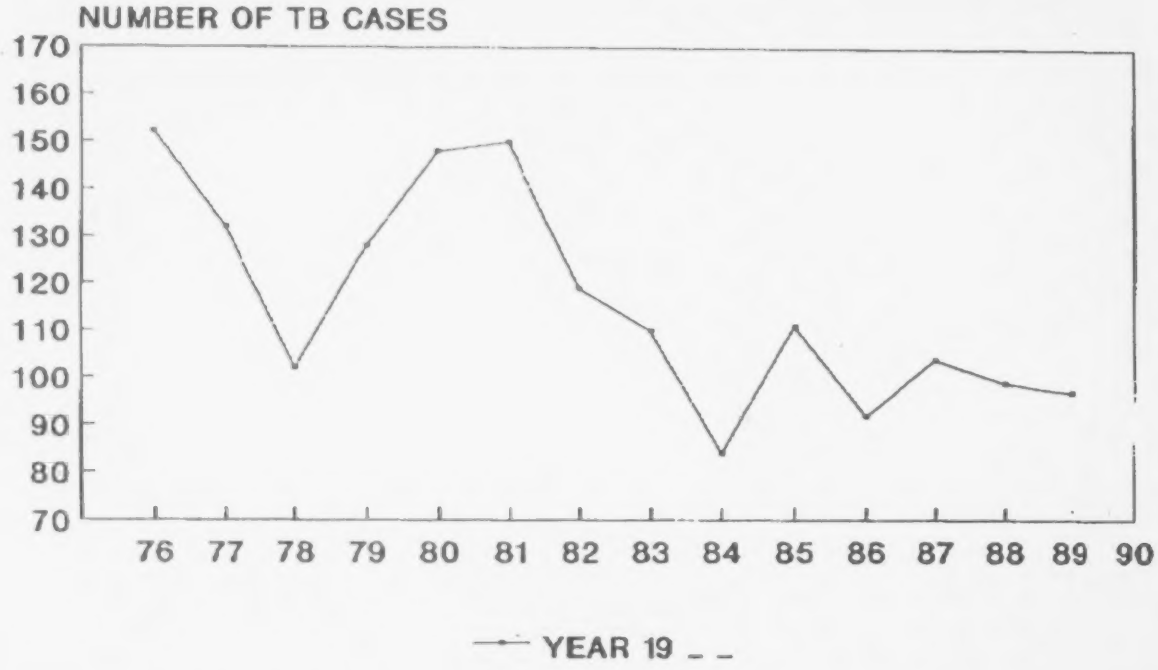
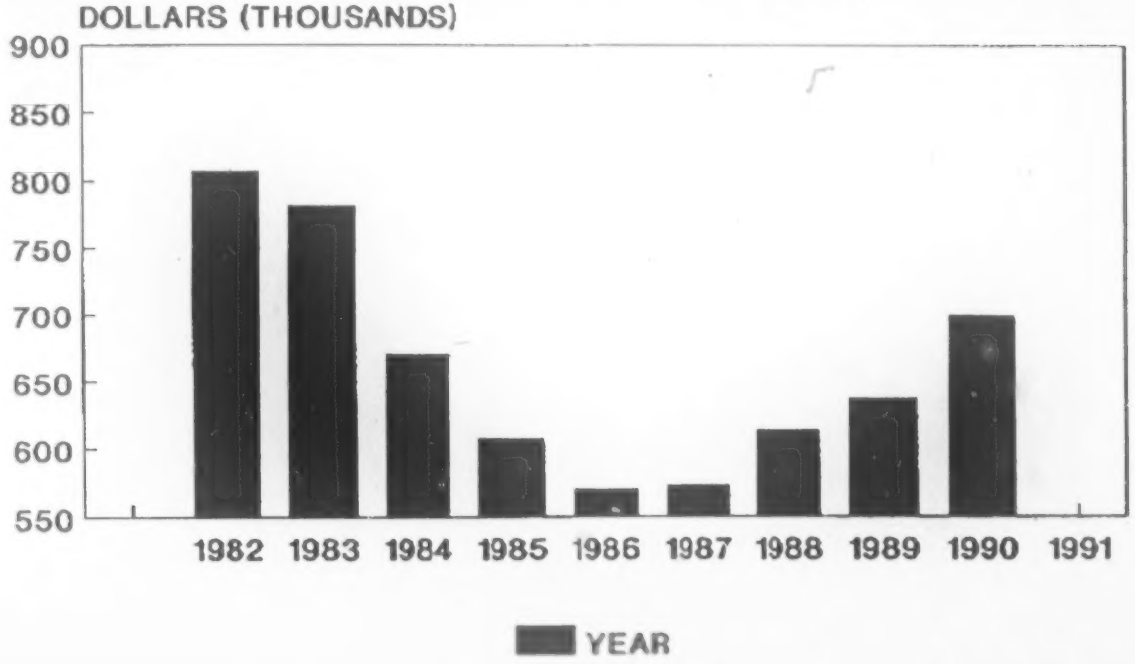


FIGURE 3. ANNUAL TUBERCULOSIS CONTROL BUDGET 1982-1990 SEATTLE-KING CO DEPT OF PUBLIC HEALTH



Senator ADAMS. Thank you very much, Dr. Nolan.

I will have some questions, but I would prefer to proceed with Dr. Thompson, then I will question both of you.

Dr. Thompson, welcome and we are pleased to have your testimony.

STATEMENT OF DR. F. E. THOMPSON, JR., M.D., M.P.H., STATE EPIDEMIOLOGIST, CHIEF, BUREAU OF PREVENTIVE HEALTH, MISSISSIPPI DEPARTMENT OF HEALTH, JACKSON, MS

Dr. THOMPSON. Thank you. It is a privilege to be here.

It is particularly a privilege to be in a hearing where such folks as Dr. Comstock, Dr. Snider and others will also be testifying. In this company, I feel rather like Mark Twain speaking of himself and Roger Kipling.

With regard to tuberculosis, Dr. Nolan, Dr. Comstock, Dr. Snider, and myself cover all knowledge. They know all that can be known and I know the rest. [Laughter.]

On behalf of the American Public Health Association, I bring the Association's general concern for control of tuberculosis, echoing the Secretary of Health and Human Services, Louis Sullivan's statement, that it is unacceptable that tuberculosis continues to be a public health program in the United States.

As a representative of the Mississippi State Department of Health, I bring very focused concern from the perspective of an area with high incidents of tuberculosis.

The U.S. Public Health Service has noted that tuberculosis is retreating into demographically and geographically defined pockets in the United States. I speak on behalf of one of those pockets.

For most of the last decade Mississippi has been among the top 10 States in the Nation for tuberculosis. In 1988, Mississippi ranked third in the Nation for tuberculosis case rates, being surpassed only by Hawaii and New York.

In 1989, Mississippi's tuberculosis case rate was 14.1 cases per 100,000 population. The Nation's rate was 9.5. Figure 1 in our handout and this chart shows Mississippi's case rate for tuberculosis and that of the United States over a period of years. As you can see, although the case rates declined rapidly for a while both in Mississippi and the United States, the decline has begun to level off and for Mississippi it is leveling off at a rate far above that for the rest of the Nation.

Other southeastern States had a similar problem with tuberculosis. Alabama, Florida, Georgia, South Carolina, and Tennessee all have tuberculosis case rates well above the national average and all have been in the top 10 States for tuberculosis case rates for the last 2 years.

In addition to representing one of the geographic pockets of tuberculosis, Mississippi also exemplifies one of the demographically defined pockets.

We are acutely aware that tuberculosis disproportionately affects nonwhites. Our population is 36 percent black and 2 percent American Indian and yet, 56 percent of our tuberculosis cases have occurred in blacks and 4 percent in American Indians.

This chart shows Mississippi's white and nonwhite tuberculosis case rate for 1989. 8.5 cases per 100,000 among whites, 24.2 cases per 100,000 among nonwhites.

Mississippi's 1989 nonwhite tuberculosis case rate of 24.2 cases per 100,000 population is the same as the case rate for the United States population as a whole in 1968, more than 20 years ago.

We have made great progress in the control of tuberculosis, but that progress has not been enjoyed by members of some minority groups.

Screening programs have addressed certain high risk populations and identified additional pockets of tuberculosis. One pocket that we identified is a prison population which has a 25 percent tuberculosis infection rate among Mississippi prison inmates. The majority of these infected prisoners have not yet completed an adequate course of preventive therapy. In order to effectively address the need to deliver preventive therapy, our State is having to identify additional State resources to add the staff necessary to provide the treatment.

With such additional demands on State resources, we need the supplemental Federal funds to continue, let alone increase, our efforts in other populations in the State if we are to reach the goal of eliminating tuberculosis.

In addition to being one of the highest prevalent States for tuberculosis, Mississippi is currently experiencing a small but significant outbreak of drug-resistant tuberculosis. Our current outbreak is an example of one of the major reasons for Federal involvement in tuberculosis control: interstate transmission.

The index case in the outbreak was originally diagnosed in another State where he abandoned treatment after insufficient therapy, to resurface later in Mississippi with drug resistant tuberculosis.

Both the American Public Health Association and the Mississippi State Department of Health endorse the concept of prevention control and elimination of tuberculosis in the United States and support the Strategic Plan for the Elimination of Tuberculosis in the United States developed by the Centers for Disease Control.

This document sets forth a three step plan of action. The first of these is more effective use of existing prevention and control methods, especially in high risk populations.

Due to funding constraints, we in Mississippi find ourselves in much the same position as the farmer who when asked why he was not going to the grange meeting replied, "Because I ain't farming half as well now as I know how".

Effective drugs are available to treat tuberculosis and render the patient noncontagious. For persons infected but without disease, preventive therapy with currently available drugs reduces the risk of the disease by more than 90 percent. The principle difficulty is the long time period for which these medications must be administered.

A highly effective approach to this difficulty is directly observed therapy, something we have adopted in Mississippi as a basic tool for tuberculosis control.

Directly observed therapy in which the patient takes the prescribed medication daily or twice weekly in the presence of public

health personnel to assure compliance is necessarily labor intensive.

In many cases the patients come to health department clinics to take their medications. However, in some cases the patient cannot or will not do so. In these, cases it is necessary for us to send our staff to the patient's home or place of work to carry out directly observed therapy.

For such outreach efforts we rely in significant part on Federal funds through cooperative agreements authorized under the Tuberculosis Prevention and Control Program.

We recognize the importance of State support for tuberculosis control efforts. In State fiscal year 1990, as this chart shows, Mississippi will spend approximately $3 million toward the prevention and control of tuberculosis, almost 63 percent, 62.3 percent will come from State funds. Local funds account for 10 percent, fees and third party earnings, 15 percent, and Federal funds approximately 12 percent with about 8 percent of this being Preventive Block Funds and a little bit less than 4 percent being Tuberculosis Prevention and Control Funds.

This 4 percent that is represented by the action that is now before the Congress for reauthorization may seem like a small amount, but to us it is a very critical amount because it is this 4 percent of our tuberculosis control funding that pays for the critical outreach efforts to prevent the disease before it occurs rather than to treat it.

From the standpoint of the Mississippi State Department of Health, because of our high incidents of tuberculosis, and on behalf of the American Public Health Association, I urge not only the reauthorization of the Tuberculosis Prevention and Control Program, but the appropriation of adequate funds to fully fund the strategic plan for elimination of tuberculosis.

The amount proposed in the administration budget for tuberculosis control for next fiscal year is just over $8 million. The amount needed to fully fund the strategic plan is $36 million.

In the absence of such funding, tuberculosis, a disease that should no longer be a public health problem in the United States, will continue to drain funds and resources. We can treat tuberculosis at high cost or we can prevent it at much lower cost.

States such as Mississippi are prepared to shoulder their share of the responsibility for the prevention and control and elimination of tuberculosis. However, we need continued supplemental help from Federal funding.

Thank you.

[The prepared statement of Dr. Thompson follows:]

Prepared Statement of F. E. Thompson, Jr., M.D.

I am Dr. Ed Thompson, State Epidemiologist and Chief of the Bureau of Preventive Health Services for the Mississippi State Department of Health. It is my privilege to represent the American Public Health Association and the Mississippi State Department of Health before this committee, speaking in support of re-authorization of the Tuberculosis Prevention and Control Program. As a representative of the American Public Health Association, I bring the Association's general concern for the control of tuberculosis, echoing Secretary of Health and Human Services Louis Sullivan's statement that "it is unacceptable that tuberculosis continues as a public health problem in the United States." As a representative of the Mississippi State Department of Health, I bring a very focused concern from the perspective of an area with a high incidence of tuberculosis.

The U.S. Public Health Service has noted that tuberculosis is "retreating into geographically and demographically defined pockets" in the United States. I speak on behalf of one of those pockets. For most of the last decade, Mississippi has been among the top 10 states for tuberculosis. In 1988, Mississippi ranked 3rd in the nation for tuberculosis case rates, surpassed only by New York and Hawaii. In 1989, Mississippi's case rate for tuberculosis was 14.1 cases per 100,000 population. The provisional U.S. case rate for 1989 was 9.5 cases per 100,000 population. Figure 1 shows Mississippi's tuberculosis case rate and that of the U.S. for the last 22 years. Our tuberculosis case rate, instead of declining steadily has reached a point in the last several years of "leveling off," at a level well above the national rate. Other southeastern states have a similar elevated incidence of tuberculosis. In both 1987 and 1988, Alabama, Florida, Georgia, South Carolina and Tennessee all had tuberculosis case rates well above the U.S. rate, and ranked among the top 10 states for tuberculosis case rates.

In addition to representing one of the geographic pockets of tuberculosis, Mississippi also exemplifies one of the demographically defined pockets. We are acutely aware that non-whites are disproportionately affected by tuberculosis. Our population is 36% black and 2%

American Indian, but over half (56%) of our tuberculosis cases occur in blacks, and 4% occur in American Indians. As Figure 2 shows, in 1989, Mississippi's tuberculosis case rate for non-whites was 24.2, contrasted with a case rate for whites of 8.5. While this country has made great progress in reducing tuberculosis in the population as a whole, the benefits of this progress have not been enjoyed by minority groups. Mississippi's non-white case rate of 24.2 cases per 100,000 exceeds that for the U.S. population as a whole in 1968, over 20 years ago.

Screening programs, as recommended by the strategic plan, are already in place. These address high risk populations, and have identified additional "pockets" of tuberculosis. A particular problem was identified when we began screening our state prison population. We have identified a tuberculosis infection rate of 25% in Mississippi prison inmates. The majority of these infected prisoners have not yet completed an adequate course of preventive therapy. In order to effectively address the need to deliver preventive therapy to prisoners in the state system, our state is having to identify additional state resources to add the staff to provide the treatment. With such additional demands on state resources, we need the supplementation of federal funds to continue, let alone increase, our efforts in other populations in the state if we are to reach the goal of elimination of tuberculosis.

In addition to the problem of being one of the highest prevalence states for tuberculosis, Mississippi is currently experiencing a small but significant outbreak of drug-resistant tuberculosis in its Gulf Coast region. Drug-resistant tuberculosis is much more difficult and expensive to treat, and in this case the resistance is to one of the most basic tuberculosis drugs, rifampin. Our current outbreak of rifampin-resistant tuberculosis is an example of one of the major reasons for federal involvement in tuberculosis: interstate travel. The index case in the outbreak was originally diagnosed in another state, where he abandoned treatment after inadequate therapy, to resurface later in Mississippi with drug-resistant tuberculosis.

Both the American Public Health Association and the Mississippi State Department of

Health endorse the concept of prevention, control, and elimination of tuberculosis in the United States, with elimination being defined as a case rate of no more than 1 case per million population, and support the "Strategic Plan for the Elimination of Tuberculosis in the United States" developed by the Centers for Disease Control and its advisory committee for the elimination of tuberculosis. This document sets forth a 3-step plan of action. The first of these 3 steps is "more effective use of existing prevention and control methods, especially in high risk populations." Due largely to funding constraints, we in Mississippi find ourselves in much the same position as the farmer who, when asked why he wasn't going to the Grange meeting, replied, "Because I ain't farmin' half as well now as I know how to." Effective drugs are available to treat tuberculosis and render the patient non-contagious. For persons infected but without disease, preventive therapy with currently available drugs reduces risk of disease by more than 90% in those who complete the full course of treatment. The principal difficulty is the long period of time for which these medications must be administered. A highly effective approach to this difficulty is directly observed therapy, something we have adopted in Mississippi as a basic tool for tuberculosis control and prevention. Directly observed therapy, in which the patient takes the prescribed medications daily or twice weekly in the presence of public health personnel to assure compliance, is necessarily labor intensive. In many cases, the patients come to health department clinics to take their medication. However, some patients cannot or will not do so, and in these cases it is necessary for us to send our staff to the patient's home or place of work to carry out directly observed therapy. For such outreach efforts, we rely in significant part on federal funds through cooperative agreements authorized under the Tuberculosis Prevention and Control Program.

Here are two examples of how these federal Tuberculosis Prevention and Control funds are used. In one county, Tuberculosis Prevention and Control funds are used to contract with a nurse to work as an outreach worker. This nurse, counseling with an alcoholic tuberculosis patient who was living in the streets, after considerable effort persuaded the

patient to enter an alcohol rehabilitation treatment program. The patient completed the recommended course of treatment for alcohol abuse, stopped drinking, has regained his normal weight, has a job, rents a small house, and no longer lives on the streets. In appreciation and gratitude, he is influencing other alcoholic tuberculosis patients not only to become more compliant with their tuberculosis treatment, but to enter an alcohol rehabilitation program. In another county, there is a considerable problem with tuberculosis in the Choctaw Indian population. Federal tuberculosis control funds are used to help support a Choctaw outreach worker, who works both on and off the reservation providing liaison with the Choctaw population. Speaking the Choctaw language and being a part of the community, she provides valuable communication between Indian tuberculosis patients and nurses providing care. Her effectiveness is underscored by the willingness of the Choctaw tribe to provide matching funds to help support her activities.

We recognize the importance of state support for tuberculosis control efforts. In state fiscal year 1990, Mississippi will spend approximately $3 million toward the prevention and control of tuberculosis. Figure 3 gives a breakdown of these expenditures by funding source. Of this amount, an estimated 62% is state funds. Ten percent comes from local funds, slightly over 15% from fees and third party payers (less than half of which is federal) and approximately 12% comes from federal sources: just over 8% from Preventive Block funds, and just under 4% from the federal Tuberculosis Prevention and Control Program, now up for re-authorization. This 4% may sound like a small part of our tuberculosis control efforts, but it is a critical part, since it funds the outreach efforts that are aimed at prevention of tuberculosis. For the last 2 years, Mississippi has received only about half the funds it has requested for our tuberculosis cooperative agreement.

From the standpoint of the Mississippi State Department of Health, because of our position as one of the highest incidence states in the nation for tuberculosis, and on behalf of the American Public Health Association, I urge not only the re-authorization of the

Tuberculosis Prevention and Control Program, but the appropriation of adequate funds to fully fund the Strategic Plan for the Elimination of Tuberculosis in the United States as developed by the U.S. Public Health Service. The amount proposed in the administration budget for tuberculosis control for the next federal fiscal year is just over $8 million. The amount needed to fully fund the Strategic Plan for the Elimination of Tuberculosis is $36 million. In the absence of such funding, tuberculosis, a disease that should no longer be a public health problem in the United States will continue to drain funds and resources. We can treat tuberculosis at high cost, or we can prevent it at much lower cost. States such as Mississippi are prepared to shoulder their share of the responsibility for the prevention, control and elimination of tuberculosis. However, we need the continued supplemental help of federal funds in this area.

I will be happy to answer any questions that members of the Committee might have.

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TUBERCULOSIS CASE RATES
MISSISSIPPI VS UNITED STATES
1968 - 1989

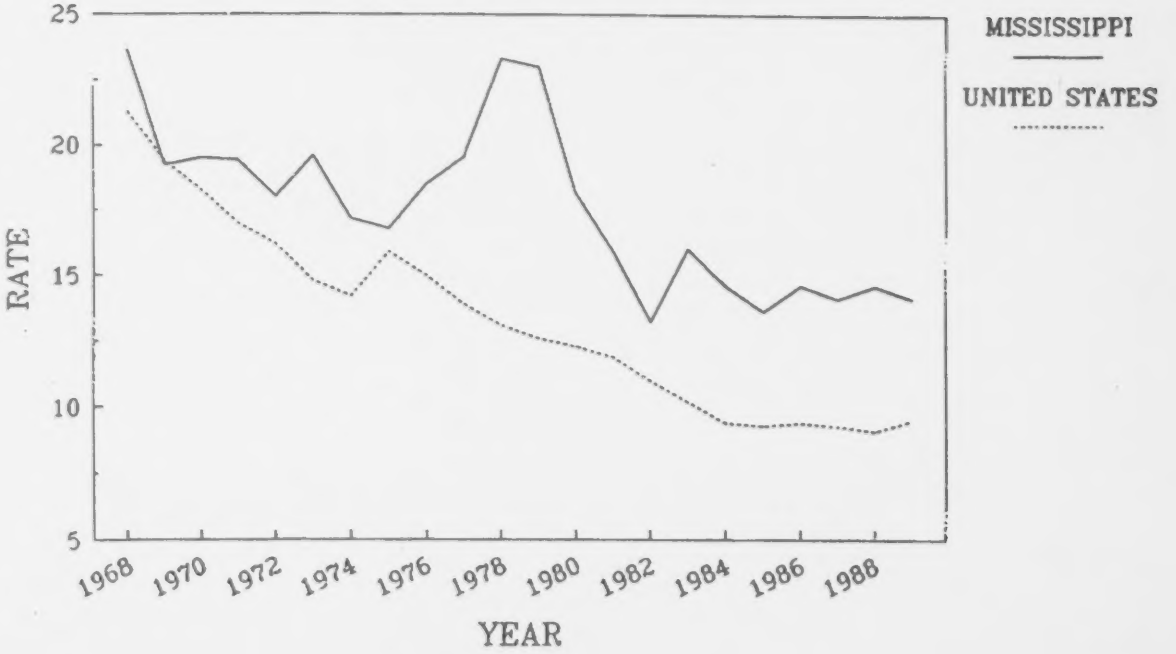


Figure 1.

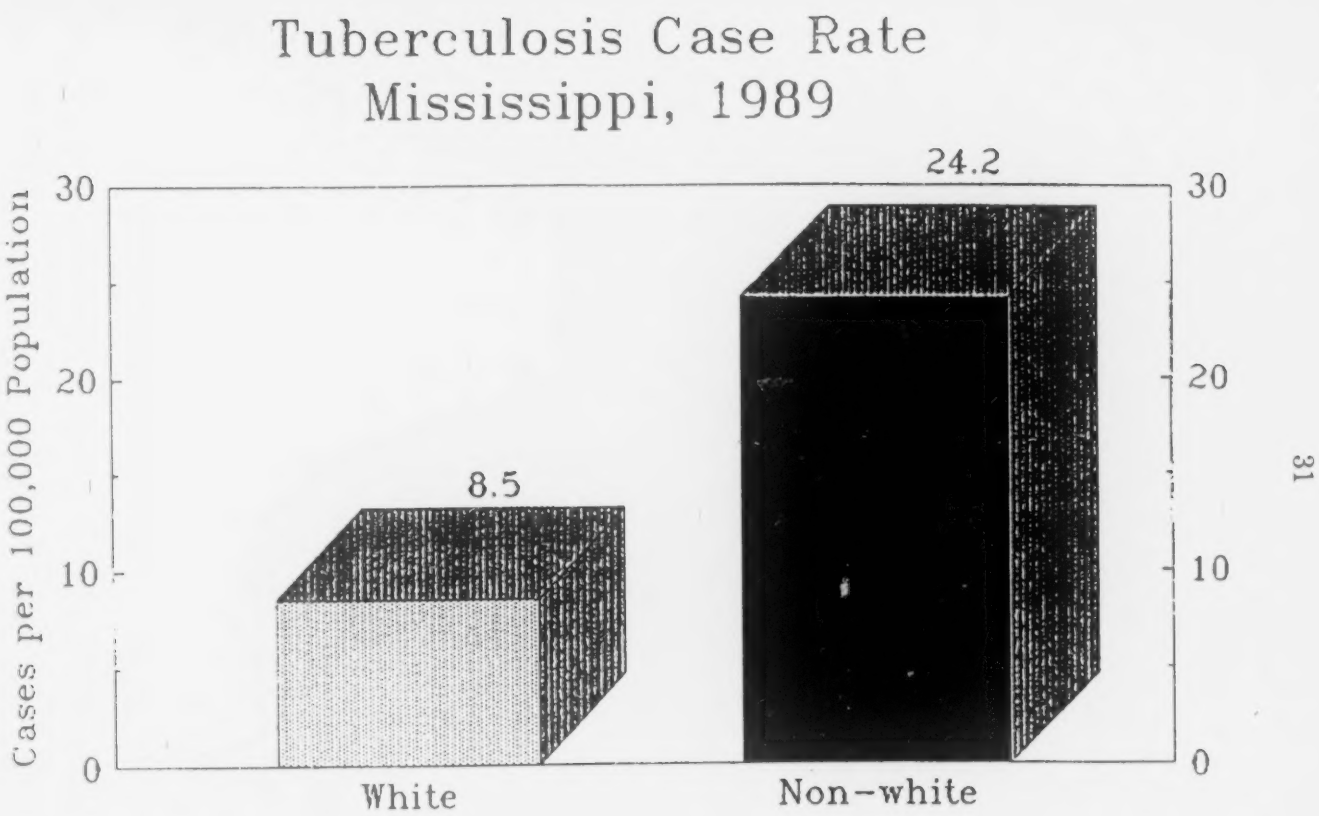

Tuberculosis Case Rate
Mississippi, 1989
Cases per 100,000 Population
30
20
10
0
8.5
24.2
White
Non-white

Figure 2.

Tuberculosis Control Funding
Mississippi
State FY 1990

(ESTIMATED)

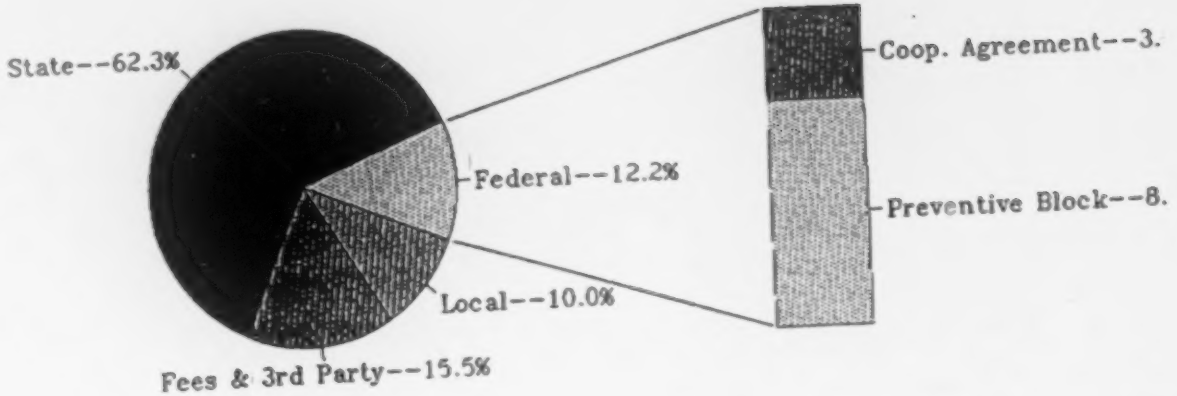


Figure 3.

Senator ADAMS. Thank you very much, Dr. Thompson.

Prior to going into my questioning, I want to indicate that Senator Cochran, who was here a little earlier, has a statement. Without objection, his statement will appear in full in the record at the beginning of the hearing.

Senator ADAMS. Dr. Thompson, I want you to know that I look forward to working with Senator Cochran, who is on this committee. We both serve on the Appropriations Subcommittee and want to fund this program. One of the reasons for our hearing is we are appalled by the fact that the State of Washington's tuberculosis rate compared to that of the United States is significantly higher, just as it is in the State of Mississippi.

This leads into my question and I will ask it first of you, Dr. Nolan. Will you identify for the committee why you believe that the homeless population is showing this increase and what you have done with your grant funds to reduce this?

It is my understanding, and I believe it is apparent to all of us, that if you have people who have immigrated from a high instance tubercular area carrying with them tuberculosis, they could conceivably infect a population.

I would like to have whatever comments you want to make on that.

Dr. NOLAN. The homeless people have always been devastated by tuberculosis and in a way they are a mirror of our society with respect to that disease that goes back 50 years.

They are subject to a number of chronic health conditions which may predispose them to the recrudescence of tuberculosis if they become infected. Because of living circumstances often in crowded shelters or in groups of individuals banding together to attempt to sustain themselves, the possibility for transmission of infection is also very high.

I think we are seeing a situation of a deprived ability to receive the basic health services which many other segments of this population have been receiving for a number of years.

In other words, a number of socio economic and health issues have kind of converged on this segment of our society.

Senator ADAMS. The reason I am so very concerned and want to pursue this further is that we have had incidents of a homeless shelter being infected in our region with devastating results.

Now that our homeless population is increasing, the ability to in any way control the shelter atmosphere is also reduced.

What do you use as a program to try to meet this challenge? Do you send people in to check the shelters? Is that it? I am trying to determine what it is I need to be saying both to the mayors and to others regarding what I see as a devastating public health problem. As we have increase among the homeless, if we have this kind of danger, we have got to move your people in at the same time or we are going to have a horrendous problem.

Dr. NOLAN. I quite agree. Senator Adams, as Dr. Thompson said just a moment ago, working with homeless individuals and others at high risk is a very labor intensive situation.

We have programs established, through our TB Project Grant, with the largest Seattle downtown shelters. We first sent our own workers in to start screening programs to detect those who were at

risk of tuberculosis before they manifested the disease and could spread it.

Now our efforts have gone a step beyond and that is to assist shelter staff in setting up their own programs. In that sense, our project grant was kind of a stepping stone to picking up this responsibility in our own community, which is where we want the final responsibility to rest.

Senator ADAMS. Dr. Thompson, both you and Dr. Nolan have discussed specific populations. How are you able to target your people by specific groups such as Native Americans. I guess I should have asked Dr. Nolan about Asian refugees and the Native American Indian populations.

I think—because I am going to have to try to explain this to get the money up from 6.6 for fiscal year 1990, up to $36 million. I am going to have to have some arguments here and I want to be sure that I describe this in lay terms so that everybody understands it.

What do you do with these populations? How do you penetrate them? Is there an immediate testing by saliva or otherwise? And finally, what type of drugs do you give and how often do you have to provide treatment?

I just need a practical explanation as to how you would attack one of these, what has been referred to as high risks or pocket areas of tuberculosis.

Dr. THOMPSON. Well, first, let me give you an example of how we spend the money specifically on staff in certain populations such as Native Americans. We have a significant problem with tuberculosis in our Choctaw Indian population in Mississippi.

One of the things we have done with grant funds is to contract with a Choctaw Indian to be an outreach worker to help do liaison—

Senator ADAMS. This person would actually test a large group of people, is that it?

Dr. THOMPSON. These people primarily deliver therapy, take the drugs to the people, take them their medicines, hand it to them, watch them take it in many cases. Sometimes finding them is the main job that the outreach worker will have to do and then the nurse will administer the therapy.

By using a Choctaw Indian who speaks the language and is part of the community, we are able to gain access to parts of that Native American population that we would not be able to gain access to otherwise.

It works so well that the Choctaw tribe has seen fit to underwrite half the cost with a matching fund arrangement. So we are really pleased with the way that money is being spent.

Once a person has been identified as having tuberculosis, finding them is not as hard as treating them. Identifying people with the disease is really the easy part. The difficult part is to get someone to continue taking medicines daily or twice a week for 6 months, 9 months, or a year, which is how long it takes—day in and day out, weekin, week out, taking the medicines to actually cure someone of tuberculosis.

This is difficult enough when you have someone who has a permanent address, a stable lifestyle, and regular habits. When you have someone who is homeless, when you have someone who is on

the street, when you have someone who is not complying with the regiment, then public health workers must sometimes go and find these person and bring them back.

Sometimes our public health workers go and bring the people back off the streets, get them into alcohol rehabilitation programs, get them into employment situations, do whatever is necessary to get them where they are able to take their medicine, make sure we can locate them, and give them the drugs.

It is more a matter of social interaction and social service, than it is medical care, when you get right down to it. We can use someone who is not a doctor or a nurse. A lay person, trained in a little bit of basic tuberculosis can go out and administer the therapy.

It doesn't require expensive personnel, it just takes a lot of personnel and it takes them a lot of time to locate the people.

Senator ADAMS. Thank you very much.

We have 29 tribes in our area, Dr. Nolan has the Indian Health Service cooperated and are they part of your operation as is true in Mississippi. Since our tribes are so isolated, have you had any success in getting some of them involved?

Dr. NOLAN. In Seattle and King County itself, the TB problem in Native American populations is pretty much born by our agency itself. We have not had the opportunity to do much with the Indian Health Service.

Senator ADAMS. Thank you both very much. I appreciated your testimony. Because you are people who are in the field, you are particularly well qualified to help us with this problem.

I would now like to call on Dr. George Comstock, Professor of Epidemiology at Johns Hopkins University, Hagerstown, Maryland, and Dr. Lee Reichman, M.D., Professor of Medicine, American Lung Association from Newark, NJ.

I took the liberty of quoting you, Dr. Comstock, as to where we had been and where we are going because many of us who were born and grew up in the Depression and so on, would rather hope that tuberculosis was a thing of the past. Because we're told of the horrors of it by our parents, I really am horrified to find that it is raising its ugly head again.

Please proceed and if I have misquoted you, please correct me.

STATEMENT OF DR. GEORGE COMSTOCK, PROFESSOR OF EPIDEMIOLOGY, JOHNS HOPKINS UNIVERSITY, HAGERSTOWN, MD

Dr. COMSTOCK. Well, Thank you, Senator Adams.

I do not think you have misquoted me. The best I can remember, I did say those words and I said them as far back as 1979, if I remember correctly.

Our big problem in tuberculosis control is the fact that so many people think it is on its way out automatically and as a matter of fact, people are surprised that we still have on the order of 20,000 cases every year.

I am here today representing the American Lung Association and to make it clear that the American Lung Association endorses the recommendation of the Advisory Committee to eliminate tuberculosis—that the United States establish the goal of tuberculosis elimination by the year 2010.

An expanded tuberculosis control program, as recommended by the Advisory Committee, would not only prevent the majority of tuberculosis cases in the United States, but also save health care dollars.

Until 1985, as has been pointed out, tuberculosis had been declining at the rate of about 5 percent per year. If that rate of decline had continued, it can be estimated that without full implementation of the plan, elimination of tuberculosis would not occur until about the year 2070.

During this period, more than 600,000 cases of tuberculosis would be reported, about two-thirds of them would be preventable. And in 1988 dollars, the prevention of these more than 400,000 cases would represent a savings of over $8 billion.

I would like to point out that in my testimony that got faxed to you the other day, the last set of three zeros got left off. It is $8 billion, not $8 million.

Unfortunately, as you have heard, since 1984, the previous steady decline in tuberculosis has come to a halt and there has been essentially no decline since that time.

So in view of that fact, you may be wondering why we are talking about elimination. Well, as far as we can tell, case rates have ceased to fall for two main reasons. One is that gradual cutback in tuberculosis control activities has occurred during much of the preceding decade. The other is the impact of the AIDS epidemic.

The one good thing about this is that the AIDS epidemic can be an ally, as well as an enemy, of tuberculosis control if we can recognize our opportunities and take advantage of them.

Let me give a quick explanation. To eliminate tuberculosis expeditiously, two things are absolutely essential. We need better ways to identify persons whose bodies still harbor living tubercle bacilli because if they do they are at risk of tuberculosis for the rest of their lives. We also need better preventive treatment regiments.

We believe that both are at hand and with continued research support, even better ways should be forthcoming. But before new testing and treatment procedures can be wisely adopted, they must be given scientifically controlled trials to see if they are indeed better than the old.

To do this requires a population at high risk of developing tuberculosis if they are not identified and treated. The higher the risk, the quicker a reliable answer can be obtained.

Persons who have been infected with both tubercle bacilli and the human immune deficiency virus have a risk of developing tuberculosis that is greater than we have ever known in the past.

In this country the major group with both of those infections is the intravenous drug abuser and they are hardly the ideal group in which to carry out properly controlled trials of effectiveness.

But in much of sub-Saharan Africa, Brazil, and Haiti, for example, there are large numbers of dually infected persons, persons who are otherwise normal and who need the best possible preventive treatment.

The World Health Organization has just held an informal consultation on this problem and has endorsed the critical need for studies of preventive treatment among dually infected persons.

As a matter of fact, they have also identified a number of research groups who have developed good protocols for such studies and are looking for funding.

Where this comes back to this country means that by investing relatively small amounts of money and preventive trials in these high risk countries we can obtain answers much more quickly than we can at home.

The results can be applied both abroad and at home; abroad primarily to dually infected persons, at home primarily to persons infected only with the tubercle bacilli. Quick answers from abroad will lead to quick answers and quick results at home.

Persons who have been infected with tubercle bacilli are the utmost important to the elimination effort because they comprise the seedbed from which future cases of tuberculosis will continue to sprout.

We have within our grasp at the present time a means of reducing the seeds in the seedbed and preventing tuberculosis at its source.

With a combination of national and international research and with revitalization of our tuberculosis control activity, we can eliminate tuberculosis, do it relatively quickly and with benefit to all and get rid of this disease that no civilized developed Nation should ever have.

Thank you.

[The prepared statement of Dr. Comstock follows:]

Prepared Statement of George Comstock, M.D.

Thank you, Mr. Chairman and members of the committee, for this opportunity to stress the importance of the goal of elimination of tuberculosis. My name is Dr. George Comstock, past Chairman of the Advisory Committee for Elimination of Tuberculosis and Professor of Epidemiology at Johns Hopkins School of Hygiene and Public Health.

The American Lung Association endorses the recommendation of the Advisory Committee to Eliminate Tuberculosis that the United States establish the goal of tuberculosis elimination by the year 2010 at a case rate of less than 1 per million, and an interim target of a case rate of 3.5 per 100,000 by the year 2000.

An expanded tuberculosis control program effort, as recommended by the Advisory Committee, would not only prevent the majority of tuberculosis cases in the United States, but also save health care dollars. Until 1985, tuberculosis had been declining at the rate of about 5 per cent per year. Under similar conditions, it is estimated that, without full implementation of the Plan, elimination of tuberculosis will not be achieved until as late as 2072. During this period, more than 664,000 cases of tuberculosis would be reported and of these cases, 64 percent would be preventable. In 1988 dollars, the prevention of these more than 400,000 cases would represent a savings of approximately $8.0 billion.

Unfortunately, since 1984, the previous steady decline in tuberculosis has come to a halt, and there has been essentially no decline since that time. In view of this fact, you may wonder why we are talking about elimination.

As far as we can tell, case rates have ceased to fall for two main reasons. One is the gradual cut-back in tuberculosis control activities that occurred during much of the preceding decade; the other is the impact of the AIDS epidemic.

Fortunately, the AIDS epidemic can be an ally as well as an enemy of tuberculosis control if we can recognize our opportunities and take advantage of them. Let me give you a quick explanation.

To eliminate tuberculosis expeditiously, we need better ways to identify persons whose bodies still harbor living tubercle bacilli, and we also need better preventive treatment regimens. We believe that both are at hand, and with continued research support even better ones should be forthcoming. But before new testing and treatment procedures can be wisely adopted, they must be given scientifically controlled trials to see if they are indeed better than the old.

To do this requires a population at high risk of developing tuberculosis if they are not identified and tested. The higher the risk, the quicker a reliable answer can be obtained. Persons who have been infected with both tubercle bacilli and human immune deficiency virus have a risk of developing tuberculosis that is greater than any group we have ever known.

In this country, the major group with both infections is the intravenous drug abusers, hardly the ideal group in which to carry out properly controlled trials of effectiveness. But in much of sub-Saharan Africa, Brazil, and Haiti, for example, there are large numbers of dually infected persons -- persons who are otherwise normal and who need the best possible preventive treatment.

The World Health Organization just held an informal consultation on this problem and has endorsed the critical need for studies of preventive treatment among dually infected persons. They have also identified a number of research groups who have developed protocols for such studies and are looking for funding.

By investing relatively small amounts of money in preventive trials in high risk countries, we can obtain answers much more quickly than we can at home. The results can be applied both abroad and at home -- abroad primarily to dually infected persons; at home primarily to persons infected only with tubercle bacilli. Quick answers from abroad will lead to quick answers at home.

Persons infected with tubercle bacilli are of utmost importance to the elimination effort because they comprise the seedbed from which future cases of tuberculosis will continue to sprout. We have within our grasp the means of reducing the seeds in the seedbed and preventing tuberculosis at its source. With the combination of national and international research and revitalization of our tuberculosis control activities, we can do it quickly and with benefit to all.

Senator ADAMS. Thank you very much, Dr. Comstock.

I will have some questions, but first, I would like to hear from Dr. Reichman.

STATEMENT OF DR. LEE R. REICHMAN, M.D., PROFESSOR OF MEDICINE, AMERICAN LUNG ASSOCIATION/AMERICAN THORACIC SOCIETY, NEWARK, NJ

Dr. REICHMAN. Thank you, Senator Adams.

I am Lee Reichman. I am Professor of Medicine and Director of the Pulmonary Division of the University of Medicine and Dentistry of New Jersey in Newark, New Jersey. I am also a national board member of the American Lung Association, whom I represent here today.

Mr. Chairman, you have been provided my written testimony pertaining to the issue of tuberculosis morbidity which concentrates on several factors.

Senator ADAMS. Without objection, your entire statement will appear in the record as though given.

Dr. REICHMAN. Thank you, sir.

The fact that any tuberculosis is preventable and curable, but it still persists in the United States, the fact that prevention of cases saves huge amounts of money, the fact that development and evaluation of new treatment and diagnostic and prevention technologies are key, i.e., a research component in both the Centers for Disease Control and the National Institute for Allergy and Infectious Diseases, and the fact that the United States and the Bush Administration are committed to the national plan for the elimination of tuberculosis by the year 2010 requires increasing the use of available technologies, the development of new technologies, and the transfer of the new technologies into widespread use.

However, I wish to digress from the written word and to present to you some parallel, shocking, and, on the other hand, satisfying statistics.

Mr. Chairman, tuberculosis is a preventable and curable, but forgotten communicable disease, which the vast majority of Americans feel is gone. Yet 4 weeks ago, the New Jersey State Department of Health announced that tuberculosis increased in that State 20 percent in 1989 over 1988.

Similarly, they announced that in the City of Newark, a highly urbanized inner city area with a heavy minority population and its share of AIDS, the tuberculosis cases increased 35 percent over the previous year.

But we have also just seen the announcement from CDC that for the first time a State, Wyoming, had no new cases of tuberculosis in 1989.

Mr. Chairman, I have been doing tuberculosis and tuberculosis control since I finished house officer training in 1969. I have never heard of a rise of the magnitude seen in New Jersey or, on the other hand, the hope generated by no cases in one State.

Mr. Chairman, our health establishment collects statistics, but we collect statistics to act upon. When in one State tuberculosis rises by an unprecedented magnitude, the statistics are telling us

something. When in another State there are no new cases, we see what is truly possible on the road to elimination.

The technology and knowledge already exists to allow us to do something about this rise of tuberculosis and to make it an anomaly rather than the ominous trend it may be.

In order to do this, we need increased directly administered therapy. We need field workers for and from the afflicted community. We need enhanced preventive measures. And to make us able to control tuberculosis in the future, we surely need 1990's technology through a research component to supplement the century old technology currently used.

Over the past few years, limited but reasonable authority for funds for tuberculosis control have been passed. However, appropriations have always been more restricted.

Tuberculosis is not sexy, but it is a major and growing problem demonstrated by the rise in one of the areas mentioned, but it can be diminished as demonstrated by the finding of no new cases in the other area mentioned.

Therefore, the American Lung Association requests that you authorize and appropriate the full amount of $36 million suggested by the national plan for the elimination of tuberculosis.

Thank you very much, sir.

[The prepared statement of Dr. Reichman follows:]

Prepared Statement of Lee Reichman, M.D.

Mr. Chairman, committee members, I am Dr. Lee Reichman, Professor of Medicine at the University of Medicine and Dentistry of New Jersey in Newark. I am appearing here today as a representative of the American Lung Association and the medical section, the American Thoracic Society.

The American Lung Association is this nation's oldest voluntary health organization, established in 1904 as the National Association for the Study and Prevention of Tuberculosis. The ALA remains committed to its original goal -- the elimination of tuberculosis -- while expanding its mission to address the greater challenge of the prevention, treatment and control of all lung diseases.

At the outset, the American Lung Association would like to thank you and the committee for the opportunity to appear before you today to discuss the reauthorization of the Tuberculosis Grant Program and the relationship of the Strategic Plan for the Elimination of Tuberculosis to this program. Most importantly, we want to express our deep gratitude for the Subcommittee's continued support of the Project Grants for Preventive Health Projects for Tuberculosis administered by the Centers for Disease Control. This program was reauthorized in 1987 with an important new component added to that authority, provision of research activity.

Secreatry of Health and Human Services Louis Sullivan has publically endorsed the recommendations made by the Advisory Committee for Elimination of Tuberculosis. In speeches, Secretary Sullivan has firmly established the goal of tuberculosis

elimination as Bush Administration policy. The American Lung Association applauds this commitment by the executive branch.

The American Lung Association appears today to again recommend the Subcommittee to exapnd the commitment to tuberculosis elimination and add two critical provisions to the existing statute.

First, due to the importance of the Project Grant Program within the Strategic Plan for Elimination of Tuberculosis, Section 317 should be renamed "Grants for the Elimination of Tuberculosis." This would clearly state that U.S. policy is to eliminate tuberculosis by the year 2010.

Second, the Advisory Committee for Elimination of Tuberculosis charged with the development of the Strategic Plan for the Elimination of TB should be statutorily established. This would allow the continuation of this important body to monitor the progress made to eliminate TB, and make periodic recommendations on needed adjustments to the Plan. The Committee would also make recommendations to Congress.

It is important that the current authorization for project and other grants be continued. We recommend a continuing authorization level at $36 million for fiscal years 1991, 1992, and 1993. The American Lung Association is very concerned with the funding levels for TB elimination.

TUBERCULOSIS MORBIDITY

Although tuberculosis is a preventable and curable disease, it persists as a public health problem in the United States and the world. When the U.S. Public Health Service was created in 1944, there were 126,000 cases of tuberculosis reported in that year. As a result of tuberculosis control efforts, between 1953 and 1984 the number of cases reported decreased annually at an average of 5 percent.

However, during the past four years there has been marked swings in the tuberculosis case rate in this country. This represents a serious destabilization in our ability to continue decreasing the occurrence of tuberculosis. For instance, the rate of **decrease** continued in 1985 at a pace of 0.2%. In 1986 we witnessed a 2.6 percent **increase** in the number of cases. In 1987, we saw a 1.1 percent **decrease.** And in 1988 there was a decrease of 5.7% in the number of cases reported. The implications of this inconsistency are placed right at the doormat of the research and development community.

Worldwide, the tuberculosis problem is enormous. Perhaps as many as one-half of the personns on earth are infected with Mycobacterium tuberculosis. Estimates of the current tuberculosis morbidity and mortality range from a prevalence of 10 to 30 million cases of active disease, an incidence of 3.5 million new cases and 3 million deaths annually.

Today, marked increases in tuberculosis in the United States occur in certain specific populations including:

- persons infected with the **human immunodeficiency virus**: HIV infection appears to have increased the incidence of tuberculosis by causing immunosuppression which allows latent tuberculous infection to progress to clinically apparent disease.

- **minorities**: nearly two-thirds of the cases now occur among racial and ethnic minorities. The case rate is consistently higher for non-whites--29 per 100,000 compared to 5.6 per 100,000 in 1985. Over 84 percent of cases in non-whites can be considered excess cases.

- **children**: 1,134 cases were reported in children under 15 years of age in 1988 and 687 cases were reported in children under five years of age. More than 55 percent of cases in children in 1988 occurred in minority groups.

- **the elderly**: among all racial or ethnic groups and both sexes, the tuberculosis case rate is highest in the elderly. The majority of cases occur among the 95 percent of elderly persons who live in the community, although the case rate is higher among the elderly living in long-term care facilities.

* **the foreign-born:** tuberculosis is very common among immigrants, refugees, and migrant workers from high prevalence countries. In 1986, tuberculosis cases among the foreign-born represented 22.6% of all tuberculosis cases reported, 22.9% of the cases reported in 1988. Nearly 60 percent of foreign-born cases occur in persons less that 35 years of age at the time of arrival in the United States and are potentially preventable.

STRATEGIC PLAN FOR THE ELIMINATION OF TUBERCULOSIS IN THE UNITED STATES

In 1987 the Advisory Committee for the Elimination of Tuberculosis was established within the Department of Health and Human Services to provide recommendations for the development of new technology, application of prevention and control methods, and management of state and local tuberculosis programs aimed at the elimination of tuberculosis. The American Lung Association endorses the Committee's recommendation that the United States establish the goal of tuberculosis elimination by the year 2010 at a case rate of less than 0.1 per 100,000 population, with an interim target of a case rate of 3.5 per 100,000 population by the year 2000.

An expanded tuberculosis control program effort, as recommended by the Committee for the Elimination of Tuberculosis, would not only prevent the majority of tuberculosis cases in the United States but also save health care dollars. It is estimated that without full implementation of the Plan, elimination of tuberculosis will not be achieved until as late as 2072. More than 664,000 case of tuberculosis will be reported in this period and of these cases, 64 percent would be preventable. In 1988 dollars, the prevention of more than 426,000 cases would

represent a savings of approximately $6.1 billion.

In conclusion, the changes in the authority and the funding levels the American Lung Association recommends are critical to acheiving the elimination of tuberculosis in the United States by the year 2010. Thank you for the opportunity to appear today. We welcome your quesations.

Senator ADAMS. Thank you very much, Dr. Reichman.

Dr. Comstock, through testimony shared and the basic knowledge, rudimentary though it may be, that most of us have about tuberculosis, we know there are treatments. Is there any likelihood that a vaccine can be developed to prevent TB somewhat like the polio vaccine?

Dr. COMSTOCK. Yes, there is a likelihood. We do have a vaccine. The trouble with a vaccine if you want quick results is that it has to be applied to someone who has not yet become infected. Even if you had a perfect vaccine, got it to everybody who needed it, and it lasted for a lifetime, you would still not get rid of tuberculosis until the last infected person had finally died.

But it makes preventive treatment so attractive if you were to allow that same imaginary perfection that we could treat every infected person and we had a 100 percent effectiveness. If we did that, tuberculosis would disappear like that. It is that seedbed that keeps it going year, after year, after year.

Senator ADAMS. That is what I was directing my inquiry to and, Dr. Reichman, you mentioned how old our technology really is. First the question of Dr. Comstock and then I would raise it a little differently to you. You heard the earlier testimony that we have definite established pockets of people that are at very high risk. Your testimony pointed out that, for example, at one State we had no new cases, in another State rising rate, which means that the use of a vaccine in targeted populations has a great potential for preventing the spread of this disease. But what I am really inquiring about is the problem that you heard from the first witnesses which occurs in a shelter situation. Unfortunately we have a number of disadvantaged persons, such as immigrants the Asians to come into these homeless shelters. Would a vaccine be effective, or is it simply that we have to put more people and more preventive treatment in there?

Dr. REICHMAN. Well, Senator Adams, tuberculosis, as you know, is a two stage disease. Someone gets infected, and there are about 10 million people in the United States who are infected with the tubercle bacilli, as long as nothing happens to them to hurt their immune system such that they do not have various stresses, or they take preventive therapy, they are never going to get tuberculosis. But if something happens and they get infected with the HIV virus, it strips their immune system, and most of them are going to get tuberculosis.

The people in the homeless shelter that was discussed earlier by Dr. Nolan, are individuals who largely have already been infected with the tubercle bacilli and they undergo various stresses which means they are going to get the disease.

Now a vaccine, as Dr. Comstock said, is not going to help these people. The only thing that is going to help them is to give them preventive treatment, treatment of their infection to keep them from getting the disease.

However, their children or the children of their friends who may be infected by them are not yet infected and those children would be helped by a vaccine, should a vaccine be developed.

Senator ADAMS. Either of you can answer this question. How good is our identification system, and, at what point does the disease become communicable?

Dr. COMSTOCK. Well, the tuberculin skin test, has not been improved since 1941.

Senator ADAMS. It has not been improved since then?

Dr. COMSTOCK. Amazingly enough, the person who made it at that time made probably the best preparation that has ever been made. All our fancy biochemistry has not yet helped. There is some hope, from what is coming up recently in the recent immune, that we an find a better antigen that will give us a better idea about who is infected and who is not.

But, again, you need a high risk population to tell that. If we did this to an ordinary American population, it would take us 30 or 40 years for there to be enough cases developed to tell us whether or not this test had really identified those at risk. You have got to have a high risk population if you want a quick answer.

Now those people who are infected are not infectious until, as Dr. Reichman said, something happens to their immune system. Stress and HIV virus are two good examples.

Senator ADAMS. And that is the point that it becomes infectious?

Dr. COMSTOCK. Then it becomes infectious.

Dr. REICHMAN. And when you become infectious, the infectious patient invariably has an abnormal chest X-ray and could be diagnosed on the basis of symptoms. You then take a chest X-ray.

Senator ADAMS. But that means putting people into these homeless shelters where we have not just the high risk persons, but others who are not as yet infected. This is what concerns me and obviously concerns each of you. It seems to me, we are putting into high risk situations a number of very innocent and vulnerable people by the way that our system is working. This is causing some enormous increases in areas like mine.

Dr. REICHMAN. Well, that is absolutely correct and the other thing which is happening is that there are now several reports of health care workers who have been exposed and infected by individuals who have undiagnosed tuberculosis. This is something we saw many years ago. People come in and they are infected with the HIV virus and we know that tuberculosis is a common coexistent infection with HIV. One of the ways that we keep HIV people living and functioning is we give them aerosolized contanimine through a respirator to keep them from developing numocystis. Numocystis, as you know, is the common pulmonary infection that occurs in HIV.

If they have undiagnosed tuberculosis, and they all cough getting the treatment, then anybody who is spending time sharing the air with them can get infected with tuberculosis and this has been described in various areas.

So the new technology to protect HIV infected people against getting numocystis, the devastating infection that is going to kill them, may spread tuberculosis to the health care workers and people waiting for the treatment, which is a down side of the whole thing.

Senator ADAMS. Thank you both very much. We certainly appreciated your testimony. It was very helpful and we will do what we can to see that this is funded.

Dr. REICHMAN. Thank you, sir.

Dr. COMSTOCK. Thank you.

Senator ADAMS. I want to call the last of the witnesses this afternoon and I appreciate your patience. We knew that some of the others had transportation problems.

Dr. Alan R. Hinman, M.D., Director of the Center for Prevention Services, Centers for Disease Control. We are very pleased to have you with us again, Doctor. Accompanying Dr. Hinman is Dr. Dixie Snider, Director of the Division of Tuberculosis Control of the Centers for Disease Control.

I first want to say before we do anything in terms of your testimony, how much all of us on the Committee who spend so much time with health matters appreciate what you do at the Centers for Disease Control and we are very glad that you are there.

So with those remarks, Dr. Hinman, why don't you start.

STATEMENT OF DR. ALAN R. HINMAN, M.D., M.P.H., DIRECTOR, CENTER FOR PREVENTION SERVICES, CENTERS FOR DISEASE CONTROL, ACCOMPANIED BY DR. DIXIE E. SNIDER, DIRECTOR, DIVISION OF TUBERCULOSIS CONTROL, CENTERS FOR DISEASE CONTROL

Dr. HINMAN. Thank you very much, Senator.

It is a pleasure for me to be here and to come along with Dixie Snider, who is Director of our Division of Tuberculosis Control.

We certainly appreciate very much the support that this Committee has given to the CDC activities over the years.

I am pleased to appear here to discuss reauthorization of the tuberculosis prevention and control program, which is Section 317(j)(2) of the Public Health Service Act.

The United States has made considerable progress in reducing the burden of TB, but the disease continues to be a significant public health problem, as you have heard from earlier witnesses.

An estimated 10 million Americans are currently infected with TB and a large majority of new cases occur in the persons who are already infected.

From 1953 through 1984, a 31 year period, we experienced a significant decrease in the number of new cases reported, from more than 84,000 to just over 22,000 in 1984.

Since 1984, however, as you have heard, the long-term decline has stopped and during calendar 1988, a total of 22,486 cases of tuberculosis were reported in the United States and we expect a similar figure for 1989 when the final figures are in.

Not only is TB static overall in the United States, but TB is increasing in some population groups among young blacks and Hispanics while TB among the nonHispanic white population continues to decline.

As you have heard, infection with the human immuno deficiency virus is having a major impact on the tuberculosis problem. Matching of tuberculosis and AIDS case registries through 1988 has

shown that 4 percent of persons who have AIDS also have active tuberculosis. This is much higher—

Senator ADAMS. Can I have that figure again?

Dr. HINMAN. Four percent of persons who have AIDS also have active tuberculosis. This is much higher than we see in the general population.

Although TB among HIV infected persons is an important issue, as several have said, the majority of persons with tuberculosis in this country do not have HIV infection. Among those who are infected with tuberculosis, we disproportionately see infection among the social economically disadvantaged and members of racial and ethnic minority populations.

In 1988, approximately two-thirds of all cases of tuberculosis occurred in members of minority populations. Compared to the non-Hispanic white population in the United States, Asians are 9 times more likely to develop tuberculosis. Blacks are 7 times more likely, Hispanics, nearly 5 times more likely, and Native Americans, 4 times more likely to develop tuberculosis.

Among children less than 15 years of age, 85 percent of cases of tuberculosis occurred among minority group members and at a third of these cases could have been prevented by the application of currently available tools.

Transmission of TB has also been documented in other settings such as prisons and shelters for the homeless. A survey in 29 States revealed that prison and jail inmates have a risk of nearly 4 times that of the general population of developing tuberculosis.

In addition, we find that approximately 50 percent of the homeless persons screened are found to have tuberculosis infection and up to 7 percent of them may have active tuberculosis.

Notwithstanding these problems, however, there is good news and you have heard that. The good news is that we can eliminate tuberculosis from the United States. The past prevention and control efforts have resulted in the retreat of this disease to geographic areas and demographically well defined populations which can be targeted for intensified control and elimination efforts, as you have heard from other speakers.

Our elimination plan, as you have heard, has three major strategies;. First, to more effectively use the techniques that are available to us now;

Second, to use the new biotechnology to develop newer techniques which will make it even more effective to try to interrupt the transmission of tuberculosis and the management of those already infected.

And then the third phase is to put those new techniques into use.

I would like to just briefly summarize how the cooperative agreement program that is funded under this Act supports the strategies of the elimination program.

We currently provide funding through this cooperative agreement program for projects in 46 territorial, State, and metropolitan health departments.

The President's fiscal 1991 budget request maintains funding level of $8.335 million to carry out the program at the same level as in fiscal 1990.

The cooperative agreements, as you have heard from Dr. Thompson, are crucial for increasing the efficiency and effectiveness of TB control programs. Although they represent only a proportion of all of the moneys spent on tuberculosis in the United States, they fund a very critical activity.

We target the highest incidence areas and the primary activities that we fund are this directly observed therapy that you have heard other speakers describe.

The problem of tuberculosis affecting persons who are disadvantaged, unemployed, or homeless is that it is very difficult for them to maintain interest and commitment to take therapy over a course of 6, 9, or 12 months and it is important to be able to assist them in taking this therapy and completing the regiment.

The majority of the money that we provide to State and local health departments is to support this directly observed therapy and more than two-thirds of the persons who are involved in this therapy, as Dr. Thompson has mentioned, are members of the ethnic and racial community from which the patients come, so they are acceptable in the population.

We also use the funds in a limited way to support some research activities which have direct bearing on improving our program prevention activities.

We will continue implementing the plan in fiscal 1990 and, once again, the programmatic funds available will continue primarily to support outreach workers to deliver directly observed therapy. We estimate that approximately 20 percent of all the persons with tuberculosis in the United States really require this directly observed therapy in order to be able to complete a regiment of 6, 9, or 12 months and to complete it on time and have a successful outcome.

Elimination of tuberculosis from the United States requires a committed partnership between the Federal Government, State and local governments, the private sector, voluntary groups, and patient advocacy groups.

Funds provided under the authority of the Public Health Service Act have been very helpful in achieving progress to date and will be equally important in achieving the target of elimination.

We are requesting a 5 year simple extension of the authority under Section 317 of the Public Health Service Act.

Mr. Chairman, that concludes my verbal testimony. I hope you will put the entire statement in the record. I will be happy to try to answer any questions.

[The prepared statement of Dr. Hinman follows:]

Prepared Statement of Alan R. Hinman, M.D.

Mr. Chairman and members of the Committee, I am Dr. Alan Hinman, Director, Center for Prevention Services, Centers for Disease Control. I am pleased to appear before the Committee to discuss reauthorization of the Tuberculosis Prevention and Control Program (Section 317(j)(2) of the Public Health Service Act.) With me today is Dr. Dixie E. Snider, Director, Division of Tuberculosis Control.

For more than three decades we have had the means to prevent and control tuberculosis (TB). But despite efforts to control this disease, TB remains an important public health problem for the United States and the world.

We estimate that worldwide, each year, 8 million new cases of TB occur and 3 million people die because of this disease. It is estimated that TB is responsible for approximately one-quarter of the preventable deaths in the world. It is one of the most prevalent infections in the world: approximately one-half of the world's population is infected with the tubercle bacillus. The worldwide TB problem has a significant impact on the United States since many of our new cases (22% of reported cases in 1988) occur in foreign-born persons.

The United States has made considerable progress in reducing the burden of TB, but the disease continues to be a significant public health

problem as evidenced by the fact that 22,436 new cases were reported to CDC in 1988. Provisional 1989 data indicate that the incidence rate of new cases will approximate that of 1988.

TB is a communicable disease. The causative bacteria (Mycobacterium tuberculosis) are usually spread from person to person through the air. Tiny airborne infectious particles are coughed by a person with untreated, active pulmonary TB. Persons sharing the same airspace with a person with active TB may inhale the infectious particles and become infected.

A healthy immune system usually will keep infected persons from developing TB. However, infected individuals remain at risk of developing active TB, and at any time the organisms may overcome the body's defenses and cause disease. Infection with the human immunodeficiency virus (HIV), which weakens the immune system, is a strong risk factor for developing active TB. I will discuss more about this later.

Left untreated, TB disease can be deadly. Without appropriate treatment, approximately 50 percent of patients will die within 2 years after symptoms appear. Although TB most commonly affects the lungs, disease at other body sites occurs in approximately 15 percent of cases.

An estimated 10 million Americans are currently infected with TB, and the large majority of new cases occurs in this group. From 1953 through 1984, the United States experienced a significant decrease in the number

of new TB cases reported -- from more than 84,000 in 1953 to just over 22,000 in 1984 (Figure 1). Since 1984, however, the long-term decline has stopped. Using trend data based on the previous decline, we estimate that from 1985 through 1989 approximately 21,000 excess cases have accumulated (Figure 2). During calendar year 1988, a total of 22,486 cases of tuberculosis were reported in the United States. The state-based incidence is shown in Figure 3.

TB is increasing among young blacks and Hispanics, while TB among non-Hispanic whites continues to decline. Much of the recent change in TB epidemiology is related to the HIV epidemic.

Infection with HIV is having a major impact on the tuberculosis problem. Matching of TB and AIDS registries through 1988 has shown that 4 percent of people with reported AIDS cases also had TB. However, this is only the tip of the iceberg. There are other cases of TB linked to the HIV epidemic. HIV infection can lead to active TB even if the person has not yet developed AIDS. Surveys in Miami, San Francisco, Seattle, and New York revealed that 23 - 42 percent of selected TB patients tested positive for HIV. Nationwide, we conservatively estimate that 5-10 percent of patients with tuberculosis may be infected with HIV. Keep in mind that tuberculosis is a preventable and curable condition even among those with HIV infection. Activities supported through the Public Health Service (PHS) Act Section 317 funding and other CDC and HHS resources are being utilized for these individuals.

Although tuberculosis among HIV-infected persons is an important issue, the majority of persons with TB do not have HIV infection. Among HIV-infected and HIV-uninfected populations, tuberculosis continues to disproportionately affect the socioeconomically disadvantaged and members of racial and ethnic minority populations.

In 1988, approximately two-thirds of all cases occurred in members of minority populations. Asians were 9 times more likely to develop TB than white non-Hispanics; blacks were 7 times more likely, Hispanics nearly 5 times more likely, and native Americans were 4 times more likely. Among children less than 15 years of age, 85 percent of cases occurred in minority group members. At least one-third of TB cases in minority group members could have been prevented by vigorous application of current TB prevention tools.

As I stated earlier, the worldwide tuberculosis problem has significant impact on the United States. In 1988, 22 percent of all persons with TB reported to CDC had been born in another country. Sixty-five percent of foreign-born cases were potentially preventable through preventive therapy.

The elderly are also disproportionately affected by TB. During 1988, 27 percent of cases occurred in the elderly, although this age group makes up only 12 percent of the population. Nursing home residents have higher case rates than the elderly not living in nursing homes, suggesting that TB is being transmitted within these facilities.

Transmission of TB has also been documented in other facilities, such as prisons and shelters for the homeless. A 29-State survey revealed that prison and jail inmates have TB case rates nearly four times the rate among non-incarcerated adults ages 15-64. In addition, data from selected areas show that a relatively high proportion (1.6 to 6.8 percent) of America's homeless have TB, and as many as 50 percent have latent tuberculosis infection.

Notwithstanding these problems, there is good news. The good news is: tuberculosis can be eliminated from the United States! Past prevention and control efforts have resulted in "retreat" of this disease into focal geographic areas and demographically well-defined populations which can be targeted for intensified control and elimination efforts.

In April 1989, Health and Human Services (HHS) Secretary Louis W. Sullivan, M.D., endorsed the goal of eliminating tuberculosis from the United States by the year 2010. Secretary Sullivan said, "It is unacceptable that tuberculosis continues as a public health problem in the United States." With advice and consultation from a large number of persons and organizations, the HHS Advisory Committee for the Elimination of Tuberculosis developed A Strategic Plan for the Elimination of Tuberculosis in the United States. The American Medical Association, the American Lung Association, the American Public Health Association, the American College of Preventive Medicine, and other health care organizations have formally endorsed the plan and are committed to participating in its implementation.

The plan has three major strategies:

1. More effective use of existing prevention and control methods in high-risk target populations.

2. Development and evaluation of new technologies for prevention, diagnosis, and treatment.

3. Rapid assessment and transfer of newly developed technologies into clinical and public health practice.

In support of the strategic plan, the FY 1991 budget contains approximately $21 million in direct funding of TB research and prevention within HHS, an 8 percent increase over the FY 1990 level of $19 million. The budget includes $8.3 million for CDC prevention and control cooperative agreements authorized under Section 317 of the PHS Act; $2.3 million of CDC in-house funds to conduct surveillance, investigate outbreaks, and provide technical assistance; $7.1 million for HIV-related TB demonstration projects, and $3.1 million for NIH funded TB research. In addition, funds appropriated to the Office of Refugee Resettlement and funds in the Preventive Health Services Block Grant are available to States to support TB control.

I would now like to discuss how CDC's Tuberculosis Cooperative Agreement program addresses these strategies.

Tuberculosis cooperative agreements authorized by the PHS Act Section 317, provide funding for projects in 46 State, territorial, and metropolitan area health departments. (Figure 4, Appendix A) The budget maintains the FY 1990 funding level of $8,335,000 to carry out this program. These cooperative agreements are crucial for increasing the effectiveness and efficiency of tuberculosis control programs. The project areas include the highest-incidence areas, such as the nation's inner cities. Most of the funds are used to provide operational support and hire outreach workers whose major responsibility is to provide case management services, especially directly observed therapy to patients who would otherwise be expected not to comply with the prescribed treatment regimen.

Cure of TB requires 6 to 9 months of continuous therapy. Persons who do not faithfully take their medications can continue to spread infection in the community and may develop drug-resistant disease, become chronically disabled, and eventually die from their disease. Although it might be desirable to provide directly observed therapy to all persons with TB, we estimate that at least 20 percent of persons require directly observed therapy to cure their disease and prevent spread of infection. Approximately two-thirds of the outreach workers who provide such therapy and services are hired from the ethnic/cultural populations that they serve.

Some health departments have reported a savings in hospital costs of $3 to $4 for each $1 spent for directly observed therapy. The Institute for Health Policy Studies, University of California, San Francisco,

recently evaluated strategies for treating TB patients and concluded: "The management strategy of choice is directly observed therapy. This is especially true in patients with identified problems, but is justifiable on a cost-effectiveness basis for all patients."

In addition to the outreach activities discussed, up to 10 percent of cooperative agreement funds are used for various educational, training, and research activities. Recently, new health care provider educational materials have been developed. CDC and the American Thoracic Society have begun a National Tuberculosis Training Initiative in collaboration with 22 national medical and nursing organizations. Plans to increase knowledge about TB among U.S. health care providers are well underway. A Core Curriculum on Tuberculosis, which will aid the participating organizations in preparing and planning educational activities, has been developed and is planned for distribution in late FY 1990.

PHS Act Section 317 funds are also used to support research activities. For example, in FY 1989, funds were used to support contracts to study patient compliance issues, analyze preventable cases, purchase laboratory specimens needed to evaluate new diagnostic techniques, and to perform clinical studies of a developmental drug, Aconiazid, which it is hoped can be used in preventing the development of TB in infected individuals.

In FY 1990, CDC will begin implementation of the three steps of the TB Elimination Plan. Programmatic funds will principally support the hiring by State and local health departments of more outreach workers to provide directly observed therapy and other services to patients. Preliminary

research will be initiated on new diagnostic and treatment methods, and technology transfer will be encouraged through support of experienced program managers requested by States and cities. Funds will also support a limited number of laboratory courses conducted for State and local technicians, and provide development of new training and educational materials for targeted audiences.

In addition, cooperative agreement funds will continue to play an important role in achieving other national objectives such as reducing health care costs, increasing minority employment, and building capacity within State and local health departments.

Elimination of tuberculosis from the United States requires a committed partnership between the Federal government, State and local governments, the private sector, voluntary organizations, and patient advocacy groups. Funds provided under the authority of PHS Act Section 317 have been very helpful in achieving progress to date and will be equally important in achieving the target of elimination. We are requesting a five year simple extension of this authority.

I would be happy to answer any questions that you or other members of the Committee may have.

FIGURE 1

Reported Tuberculosis Cases
United States, 1953 - 1988

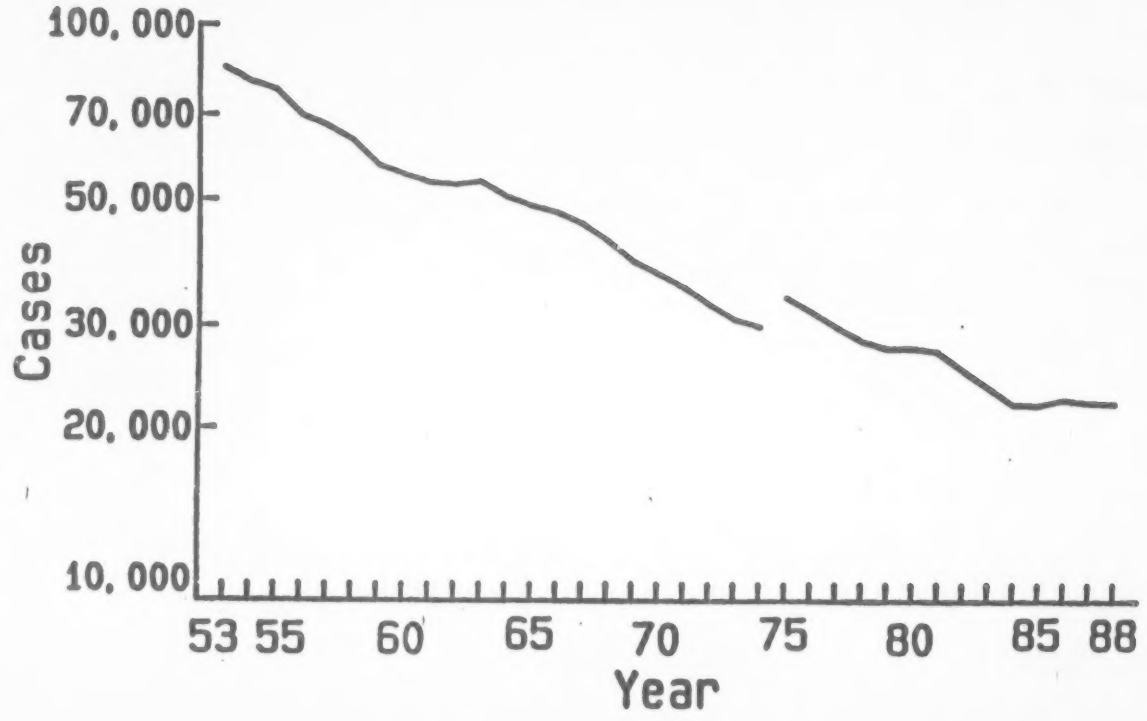
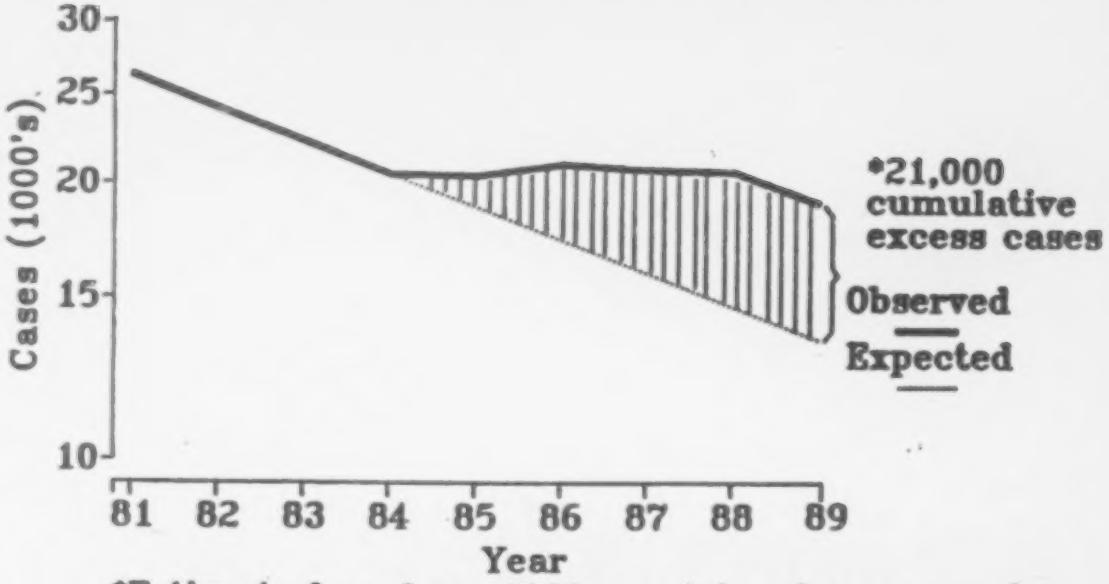


FIGURE 2

Observed and Expected Tuberculosis Cases United States, 1981–1989



*Estimate based on 1989 provisional case number

FIGURE 3

REPORTED TUBERCULOSIS CASES, 1988
(N=22,436)

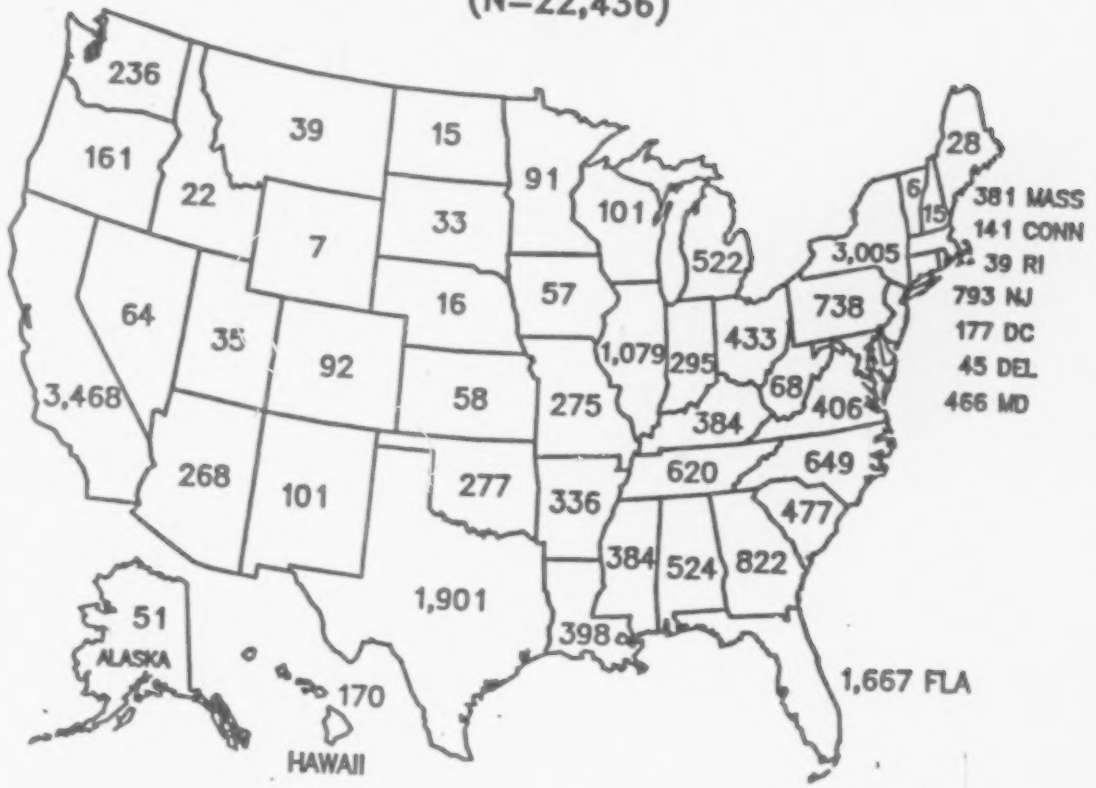


FIGURE 4

Tuberculosis Cooperative Agreements, FY1989

APPENDIX A

CENTERS FOR DISEASE CONTROL
CENTER FOR PREVENTION SERVICES
DIVISION OF TUBERCULOSIS CONTROL
FISCAL YEAR OBLIGATIONS BY GRANTEE
FISCAL YEAR: 1989

APPORTIONMENTS:	TB 317
REGION I	
Connecticut	69,641
Massachusetts	100,708
Rhode Island	0
Vermont	0
Maine	0
Total	170,349
REGION II	
New Jersey	145,221
New York State	183,338
New York City	523,963
Puerto Rico	141,877
Virgin Islands	0
Total	994,399
REGION III	
Delaware	7,378
District/Columbia	137,757
Maryland	49,295
Baltimore	168,368
Pennsylvania	88,556
Philadelphia	94,511
Virginia	123,027
West Virginia	39,102
Total	707,994

CENTERS FOR DISEASE CONTROL
CENTER FOR PREVENTION SERVICES
DIVISION OF TUBERCULOSIS CONTROL
FISCAL YEAR OBLIGATIONS BY GRANTEE
FISCAL YEAR: 1989

APPORTIONMENTS:	TB 317
REGION IV	
Alabama	91,536
Florida	606,742
Miami	0
Georgia	112,678
Kentucky	115,069
Mississippi	96,764
North Carolina	212,784
South Carolina	130,883
Tennessee	65,033
Total	1,431,489
Region V	
Illinois	169,160
Indiana	55,648
Chicago	246,635
Wisconsin	96,787
Michigan	99,213
Detroit	94,896
Minnesota	60,249
Ohio	57,600
Total	880,188
REGION VI	
Louisiana	78,329
Oklahoma	67,602
Texas	178,898
Houston	186,244
New Mexico	18,770
Total	529,843

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APPORTIONMENTS:	TB 317
REGION VII	
Missouri	140,594
Iowa	0
Kansas	0
Nebraska	0
Total	140,594
REGION VIII	
Colorado	57,119
North Dakota	0
South Dakota	0
Montana	0
Utah	0
Wyoming	0
Total	57,119
REGION IX	
Arizona	52,984
California	276,951
Los Angeles	359,006
San Diego	74,413
San Francisco	133,249
Guam	34,087
Hawaii	101,458
American Samoa	0
North Mariana Island	0
Total	1,032,148
REGION X	
Alaska	0
Idaho	0
Oregon	93,227
Washington	89,256

Senator ADAMS. Without objection, the entire statement will appear in the record.

Do you believe that this level of $8 million under Section 317 is sufficient to accomplish the elimination of TB by the year 2010?

Dr. HINMAN. Well, the $8.3 million is the amount the President has requested for fiscal 1991, Senator.

Senator ADAMS. Well, I know that and I am not asking you to commit suicide or anything, but it just seems to me that this is a very small amount of money to be sent out in grants to the various areas, if we are having this kind of a "turnaround problem."

Would it not be more appropriate, Dr. Snider, if you want to answer it, or Dr. Hinman, that we went for the $36 million level rather than an $8 million level, as suggested by the Administration?

Dr. HINMAN. Well, Senator, it has been estimated that to fully implement the elimination plan, it would take something on the order of $36 million a year for the first few years.

Senator ADAMS. That is what I am trying to get to. Let me ask you this question, Dr. Snider. I hope that the coverage that we have here today begins to cure a problem that certainly exists, which is that most people—I say most people—generally in America people think that tuberculosis has been eliminated and that the days of sending people out West and all of that kind of thing is all over and everybody is just fine. And I come to this hearing and I find that we not only have pockets of tuberculosis, one of which happens to be very close to where I live, but in other areas it is generally increasing. This is—not just because it happens to be my area, but the whole proposition that TB is coming back is almost like somebody came in and announced that leprosy was now spreading again.

Do you have a program set up to let people around the country know that this is happening. This is a terribly infectious disease and if we are having larger and larger groups of people that are at the poverty level, or going through these homeless shelters, it just seems to me that even a short visit through one of these shelters would be warranted.

Dr. SNIDER. Yes, sir, we do have a program, I am happy to say. I think to a certain extent we in the field of tuberculosis have been victims of our own success.

Senator ADAMS. I think that is very true.

Dr. SNIDER. We have reduced the tuberculosis problem in this country, particularly among middle and upper class individuals, particularly, as you have heard, among those who are white, but at the same time, we have not addressed problems among minorities. We have closed tuberculosis sanitoria and we have created the impression, I suppose, among a large segment of the population, not all of the population, but a large segment of the population, particularly a supposedly educated segment, middle and upper class, that because they are not subjected to chest X-rays, as many were on the courthouse corner when I was growing up or the TB skin tests in the schools that TB went away and actually it did not—it went away as far as they were concerned, but it retreated into these local areas.

I think that we were a bit, if you will, too blase about tuberculosis. We felt that we had all the tools that were necessary, that we could address any tuberculosis problem that might present to us, such as in a homeless shelter and deal with it with the tools that we had, which included, for example, taking 6 weeks to culture the TB bacillus in the laboratory. Now I think it is readily apparent that we need a rapid test to give us an answer the same day, indeed within a few hours, if possible.

The plan points up those kinds of needs to do the studies that are necessary to come up with the kinds of tests that are necessary.

Senator ADAMS. I just hope that you can implement the plan, first, so that you do get immediate and quick identification and, second, to identify the social problem that we are suffering from in the United States. It is appearing, and it will appear first, in the coastal cities and where we have a large influx of people who may carry the bacilli with them. However, we are also shifting a large portion of our normally stable nonminority population who are unemployed, whether it be from a logging town or from the closure of a military base or whatever reason, through these homeless shelters. These shelters obviously need a testing program of some kind in them or we are going to see an outbreak that is staggering compared to what it already is, which to me is already staggering.

Therefore, I hope, since you are from—CDC which is one of the reasons I asked the two of you to testify last, you will carry back to Atlanta and to the other areas for the Centers for Disease Control the message we have a real social problem that needs an answer to it in the area of both the people infected with AIDS, which I think you are beginning to cover, and second, that the homeless shelter problem will eventually require immediate identification and treatment and perhaps separation of people.

You are about to have a very bad TB outbreak and it will go back through the same population that you suceeded in eliminating it from, unless we receive a plan that will work. That is why I questioned you about the money. I am not just somebody here to spend the money, but it seemed to me that these programs were the only ones where you had people in the field that were looking at these shelters and saying, we have got a problem and were getting the people either out of them or getting them separated.

Dr. SNIDER. We have developed recommendations, Senator, for control of tuberculosis among homeless populations.

Senator ADAMS. And I think you need publicity for this. I know nobody wants publicity on something like tuberculosis. Everybody would like to say it has been cured, but people have to know the truth.

Dr. HINMAN. Senator, this is a serious enough problem in some areas that, for example in Massachusetts, there is a special shelter for homeless individuals with tuberculosis in order to be able to provide them directly observed therapy on the spot.

Senator ADAMS. These are the things we need to know. Governors of States will operate on this just so they have got their facts correctly stated. You are right, we have closed centers, and we had an enormous number of tuberculosis centers in the Pacific Northwest. We have closed those and now for us to begin to have an outbreak again is of serious concern to us.

Thank you both very much. We appreciate the testimony. The record will remain open for 5 days, for those who wish to submit additional testimony.

I particularly want to thank today our Congressional fellow Betty Calmer and also our intern, Mike Riley, for their excellent work in organizing the hearing and seeing to it that things moved rapidly along.

I apologize for the glitch we had in my being a little late, but you will read all about it tomorrow. We are having a very difficult time on the floor and I thought it was being covered and it was not. So I apologize for my lateness.

Thank you all.

The hearing is adjourned.

[Whereupon, at 3:05 p.m, the committee adjourned.]

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